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UNIFIED MATERIEL MANAGEMENT SYSTEM (MUMMS)

by

Lt.Col. Alvin W. Bowen

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THE MARINE CORPS  
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Lt.Col. Alvin W. Bowen



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MARINE CORPS  
UNIFIED MATERIEL MANAGEMENT SYSTEM  
(MUMMS)**

**by**

**ALVIN W. BOWEN**

Bachelor of Science  
Georgia Southern College, 1952

*A Thesis Submitted to the  
School of Government and Business Administration  
of the George Washington University  
in Partial Fulfillment of the Requirements for the  
Degree of Master of Business Administration*

**JUNE 1968**

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## P R E F A C E

The Marine Corps Unified Materiel Management System (MUMMS) is an integrated system of centralized supply management that is designed to satisfy all internal and external Marine Corps requirements by utilizing modern management and automatic data processing techniques at a single inventory control point and several remote storage activities. Moreover, it is fully compatible with all standardized requirements of the Department of Defense; such as, Military Standard Requisitioning and Issue Procedures, Military Standard Transaction Reporting and Accounting Procedures, Military Supply and Transportation Evaluation Procedures, Military Standard Transportation and Movement Procedures; and, further, with Defense Supply Agency and Mechanization of Warehousing and Shipment Processing.

Although the Marine Corps Unified Materiel Management System has only been in operation since May 1, 1967, this paper entails a complete examination of the processes and procedures by which the system operates. The purpose of this research project is to determine to what extent the system is living up to its mission of supply support effectiveness. The system's effectiveness as a management information system will also be evaluated.

The major question considered by this paper is, "Is MUMMS an effective materiel management system and an effective management information system?" In considering this question several subsidiary questions must be answered, such as what effect has MUMMS had on inventory control procedures? What effect has MUMMS had on procurement policies and procedures? What effect has MUMMS had on provisioning policies and procedures? What effects has



MUMMS had on financial management? What effect has MUMMS had on maintenance management? What effect has MUMMS had on war reserve policies and procedures?

This paper deals primarily with MUMMS operations at the Inventory Control Point (Marine Corps Supply Activity, Philadelphia, Pennsylvania) and Headquarters Marine Corps, Washington, District of Columbia. Research of the major and subsidiary questions attempts to evaluate the effectiveness of MUMMS operationally and as a supply management information system.

Prior to my attending the Navy Postgraduate Financial Management Program, I was stationed at the Marine Corps Supply Activity, Philadelphia, Pennsylvania, where I held the billet of Head, Budget Reports and Statistics Branch, Office of the Comptroller. During this two year period I had the opportunity to be in on the ground floor of system design and testing. The system was one month operational upon my departure.

I am indebted to many people responsible directly for the system design of MUMMS, not only for the invaluable information furnished me, but for their unbiased attitude in furnishing information for assessing the effectiveness of the system. I want to express particular appreciation to Mr. Thomas J. McFadden, Assistant Comptroller, Marine Corps Supply Activity, Philadelphia, Pennsylvania for his assistance, and to Merle Perry for her editing and typing.





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## CHAPTER I

### INTRODUCTION

The Marine Corps distribution system comprises all actions required in the acquisition, availability, and disposal of materiel assets of the Marine Corps.<sup>1</sup> Total system responsiveness requires contributions by elements of Headquarters Marine Corps, the inventory control point, and the primary and specialized remote storage activities. The administrative functions and tasks required in the operations of this distribution system are organized into the sixteen subsystems of MUMMS. These subsystems are:

<u>Number Identifier</u>	<u>Subsystem Name</u>
02	Data Control
03	Inventory Control
04	Stores Accounting
05	Automated Procurement
06	Mechanization of Warehousing and Shipment Processing
07	Direct Support Stock Control
08	Technical Data Management
09	Applications
10	Provisioning
11	War Reserve
12	Depot Maintenance Management

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<sup>1</sup>U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966, p. A-01-3.

# CONTENTS

The Marine Corps distribution system comprises all actions required to the recipient, availability, and disposal of surplus items of the Marine Corps. This system represents a continuous distribution of surplus of equipment from the Corps, the inventory control, and the primary and secondary storage facilities. The distribution system and its role in the operations of the distribution system are explained in the following chapters of interest. These chapters are:

CHAPTER	TITLE
1	Introduction
2	Marine Corps Distribution System
3	Inventory Control
4	Storage Facilities
5	Transportation
6	Receiving and Forwarding
7	Direct Support Stock Control
8	Technical and Management
9	Appendix
10	References
11	Index
12	Table of Distribution

<u>Number Identifier</u>	<u>Subsystem Name</u>
13	Controlled Item Management
14	Budget Data
15	Special Programs
16	Supply Management Information
17	Automated Allotment Accounting

### Inventory Control Point

The inventory control point is the central supply processing point for the Marine Corps distribution system. It is located at the Marine Corps Supply Activity, Philadelphia, Pennsylvania. It executes that phase of military logistics that controls the input availability, and disposal of materiel under its cognizance; and exercises technical direction over the operation of the Marine Corps supply distribution system.<sup>2</sup>

### Alternate Inventory Control Point

The alternate inventory control point was established in order to ensure the continuous support of Marine Corps organizations. It assumes the responsibility to perform the inventory control point machine processing functions in the event the inventory control point is rendered incapable of performing all or part of its total responsibilities by reason of loss of electrical power, machine failure, or other reasons. The alternate inventory control point is located at the Marine Corps Supply Center Albany, Georgia. Equipment configuration (IBM 360 series 50) at the alternate inventory control point is the same as that at the inventory control point.<sup>3</sup>

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<sup>2</sup> Ibid.

<sup>3</sup> Ibid.





## System Interface and Operation

The relationship of the sixteen subsystems with other Marine Corps and Department of Defense systems is shown in Figure 1 on page 4. The inventory control point and the remote storage activities are linked by the communication network called AUTODIN. The Marine Corps distribution system is also linked to Defense Supply Agency activities, such as the Defense Logistics Services Center, defense supply centers, defense contract administration services regions, and other military service installations by AUTODIN. The sixteen subsystems of MUMMS are operated as one integrated system. Data in each subsystem is available to the other subsystems for use in preparation of reports and documents.

AUTODIN interface provides the capability for a military command to drop a punched card requisition in the communication terminal, and the data contained therein will be transferred electronically over AUTODIN to the inventory control point, processed through the computer, and the order for shipment automatically passed via AUTODIN to the remote storage activities where the requisitioned item is picked, packed, and shipped.

Customers' requisitions are transmitted directly to the inventory control point via mail, message, or AUTODIN, as appropriate. The requisition is processed in the inventory control point computer. If the materiel is available, a materiel release order is transmitted to a remote storage activity for furnishing of the materiel. At the same time, any necessary status is furnished the customer by the inventory control point. When the materiel is picked, packed, and turned over to the transportation element, the remote storage activity transmits a materiel release confirmation to the inventory control point, where shipment status is produced, if requested in the requisition. Requisition processing flow is shown in Figure 2 on page 5.<sup>4</sup>

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<sup>4</sup>U.S. Marine Corps. Inventory Control Manual. MCO P4400.72, October 4, 1966, p. C-02-1.





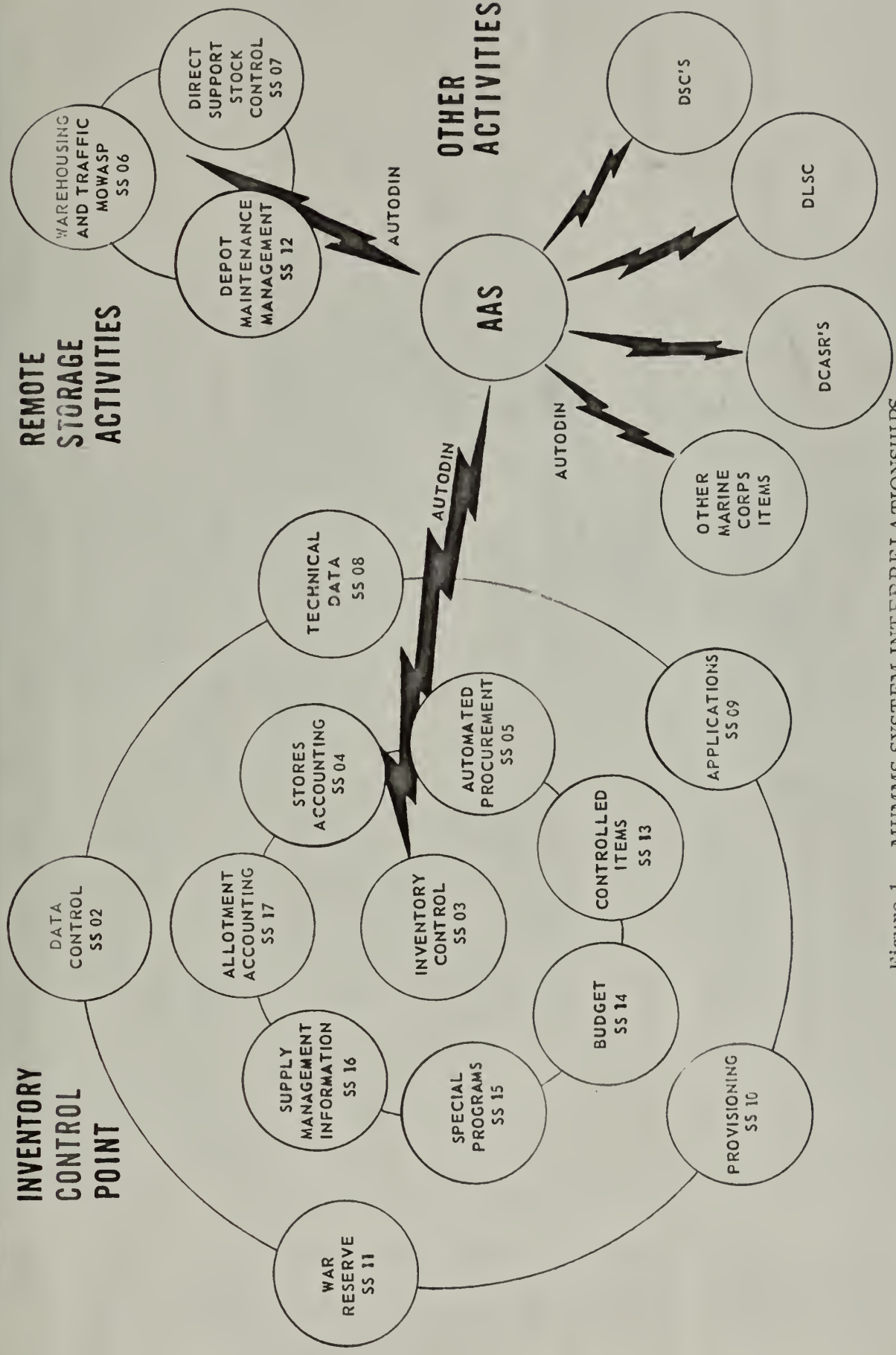


Figure 1. — MUMMS SYSTEM INTERRELATIONSHIPS

Source: U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966.





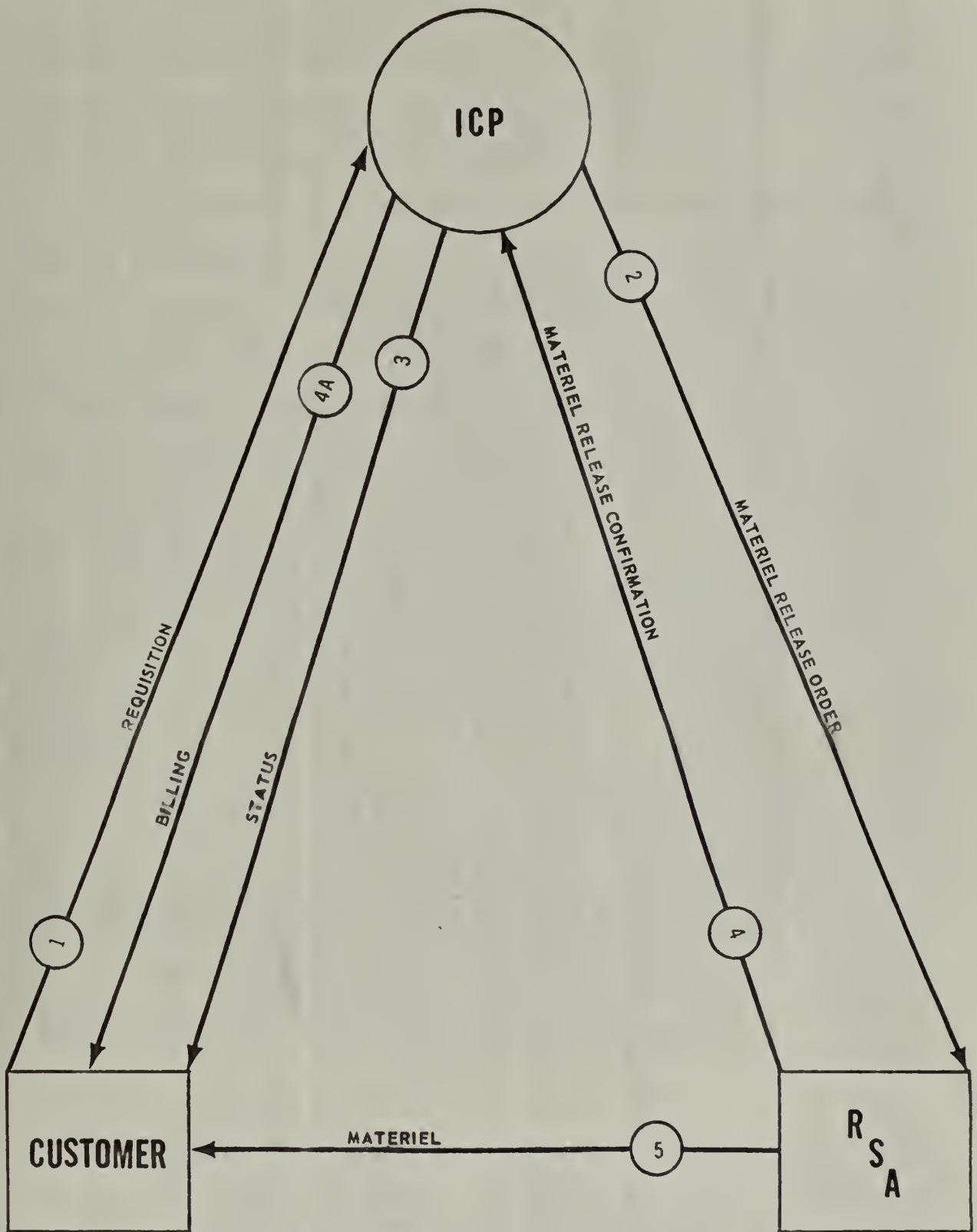


Figure 2.— REQUISITION PROCESSING

Source: U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966.



If the materiel requested on a materiel release order is not available at the remote storage activity, the remote storage activity transmits a materiel release denial to the inventory control point for further supply action. If only a partial quantity is available, the remote storage activity ships the partial quantity to the customer, and furnishes a materiel release denial to the inventory control point for the quantity denied and a confirmation for the quantity issued. Upon receipt of the materiel release denial, the inventory control point computer prepares exception status for the customer, if requested, and continues action to supply the materiel from another remote storage activity or through procurement.

#### Asset Segmentation on the Computer Record

Assets are segmented on the central computer record by purpose, condition, and location. They may also be segmented on the remote storage area item locator file by ownership. Materiel is not physically segmented in storage, however.

This system provides for various types of inquiries and replies. Inquiries may be submitted by a customer, from a subsystem or file within a subsystem to an item or project manager or from an item or project manager to a subsystem or file within a subsystem. Sets of data within a subsystem file are identified by codes. This allows the computer to furnish only the data requested by the inquiry. Replies may be output as cards or printed reports.<sup>5</sup>

#### Computer Processing Concepts

Input enters the computer through AUTODIN, card, tape, and remote devices and is accepted immediately. Priority input transactions are processed immediately, while routine ones are deferred to standby status in the computer

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<sup>5</sup> U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966, p. H-01-6.





for scheduled processing. Transactions for certain subsystems are deferred for scheduled processing during daily file maintenance. All input is edited for completeness and validity; then, it is processed in the appropriate routine. Rejects are returned immediately to the originator.

Output is transmitted through AUTODIN, card, tape, and remote devices. Each AUTODIN transmission requires a header and trailer record and may contain from one to five hundred transactions. The central processor must prepare the AUTODIN records automatically and be able to transmit AUTODIN output immediately as generated.

Twelve hours are assigned to inventory and stores on-line processing. During this period, input to inventory and stores is processed immediately while input for all other subsystems is queued for cyclic processing. Other subsystems may be scheduled and processed as time permits and inventory and stores are not jeopardized. A manufacturer's part number to federal stock number cross reference table is maintained on-line with the inventory and stores files.<sup>6</sup>

Four hours are assigned to inventory and stores file maintenance processing. During this period, the inventory and stores subsystem master files undergo a maintenance process. The process includes such things as reviewing stock levels for replenishment, posting changes, and reviewing all pending or suspended transactions and control code dates to determine if followup action is required. Processing of input must be suspended during the file maintenance run; but, if any input is received via AUTODIN during this period, the computer has the capacity to receive, identify, and queue it. If input is identified as having a priority dictating processing prior to completion of the maintenance run,

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<sup>6</sup>Ibid. p. A-02-3.





interruption occurs long enough to obtain and forward status to the requisitioner; and the transaction will then be queued for immediate processing upon completion of the file maintenance run.

Seven hours are available for cyclic processing of subsystems other than inventory and stores. During this period, input to inventory and stores is processed if time is available without interfering with the cyclic processing. If time is not available, the inventory and stores input is queued. If the priority dictates, however, the cyclic processing is interrupted; and the priority input is processed in time to meet the Uniform Military Issue Priority System requirements.

One hour is reserved for preventive maintenance on the computer by contractor engineers. The entire period is not normally required for this purpose, and may be omitted on some days if the workload should require. The contractor requires five and one-half hours per week for preventive maintenance. Daily processing commences as soon as preventive maintenance is completed.

The processing may be in effect seven days a week if the workload demands it; but, normally, on Saturdays and Sundays, processing is restricted to priority transactions for the inventory and stores subsystems which have timeframes precluding their being queued until Monday. This period is also available for any cyclic processing which could not be accomplished during the regular workweek.<sup>7</sup>

#### Command Relationships

The Commanding General, Marine Corps Supply Activity, Philadelphia, Pennsylvania is designated as the Commander of the Marine Corps inventory control point, and, in addition to having all aspects of command over the inventory

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<sup>7</sup> Ibid. p. A-02-3.





control point, exercises technical direction over the remote storage activity. Each remote storage activity is a part of the base at which it is located. The commander of a base having a remote storage activity has all aspects of command over the activity except in the area of technical direction.

Under the concept of MUMMS, remote storage activities are an integral part of the Marine Corps supply system. To ensure system effectiveness, close adherence to the following provisions is mandatory:

All officials charged with command, area coordination, or primary support responsibilities, shall discharge their responsibilities with due regard for the system-wide aspects of support efforts where service-wide system control responsibilities have been assigned. Examples are: the Naval Communication System, the Navy and Marine Corps Supply Systems, and the Navy Enlisted Personnel Distribution System.<sup>8</sup>

The base commanders and the inventory control point commander maintain close liaison regarding base support requirements (including plans, programs, and special or unanticipated requirements) affecting the remote storage activities capability to perform its system-wide supply responsibilities. These commanders mutually resolve any problems that arise in this area. When mutual agreement cannot be achieved, the matter is forwarded to the Commandant of the Marine Corps for resolution.

Funding of remote storage activity operations is accomplished by the allotment of funds by the Commandant of the Marine Corps to the base commander. The inventory control point keeps each remote storage activity informed of any significant planned changes in operations that will affect operations and maintenance budget requirements for civilian personnel—funds for travel, organic supplies, preservation and packaging materials, etc. Base commanders, in developing and submitting their operations and maintenance budgets, segment

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<sup>8</sup> Navy General Order 19, para. 8.

relative price, domestic demand, and the foreign supply curve. The domestic supply curve is a part of the total supply curve. The domestic supply curve is a part of the total supply curve. The domestic supply curve is a part of the total supply curve.

Under the concept of relative price, domestic supply curve and foreign supply curve of the domestic supply curve. To ensure relative price, domestic supply curve and foreign supply curve of the domestic supply curve.

The domestic supply curve is a part of the total supply curve. The domestic supply curve is a part of the total supply curve. The domestic supply curve is a part of the total supply curve. The domestic supply curve is a part of the total supply curve. The domestic supply curve is a part of the total supply curve.

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that portion relating to remote storage activity operations and forward a copy of the segmented portion to the inventory control point. The inventory control point reviews such budgets for system impact and submits comments, if warranted, to the remote storage activity and the Commandant of the Marine Corps.<sup>9</sup>

The Commandant of the Marine Corps assigns missions to each remote storage activity and establishes the basic functions to be performed for accomplishment of those missions. The remote storage activities may develop proposed changes in mission and functional assignments. Such proposals are forwarded to the Commandant of the Marine Corps for approval, via the inventory control point. The inventory control point reviews the proposals for supply system impact and standardization and forwards them with appropriate endorsement, with a copy to the appropriate remote storage activity.

The Tables of Organization for remote storage activities, reflecting organizational structure and personnel allowances, are a matter for resolution between the base commander of a base having a remote storage activity and the Commandant of the Marine Corps.<sup>10</sup> The inventory control point keeps each remote storage activity informed of any significant planned changes in operations that may affect the remote storage activities' Table of Organization requirements.

Remote storage activities conduct appropriate work measurement programs. Each remote storage activity collects, analyzes, and applies the data generated by those programs for improved internal manpower control and utilization. The inventory control point monitors the remote storage activity programs;

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<sup>9</sup> U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966, p. A-04-3.

<sup>10</sup> Ibid.

[illegible]

The Commission of the European Communities is well aware of the importance of the energy sector in the development of the Community and is committed to the development of a common energy policy. The Commission is also aware of the need to ensure that the energy sector is able to meet the needs of the Community in a sustainable manner.

The following chart will illustrate the various factors which influence the choice of organization for various groups and their subsequent organizational structure and personnel placement, and a further list of factors between the two elements of a well known, though slightly different, Command of the Marine Corps.<sup>10</sup> The following chart will also indicate the various factors which influence the choice of organization for various groups and their subsequent organizational structure and personnel placement, and a further list of factors between the two elements of a well known, though slightly different, Command of the Marine Corps.<sup>10</sup>



evaluates the reports for supply system impact; and submits comments, if warranted, to the remote storage activity and the Commandant of the Marine Corps. The inventory control point also utilizes data provided by reports, supplemented as necessary by other requested data, to calculate the factors for cost to hold, cost to order, cost to enter an item into the system, and cost to maintain an item in the system.

The inventory control point maintains close surveillance over all system elements to evaluate and improve supply system effectiveness. The inventory control point furnishes field assistance to the remote storage activities and recommends or initiates corrective action when warranted. The remote storage activities review and analyze internal efficiency and cooperate closely with the inventory control point in the development and maintenance of optimum supply system effectiveness.

The inventory control point develops and promulgates the requirements for supply system-wide reports and reporting systems, to include the needs for management information at the inventory control point and the remote storage activities, and incorporates reports as directed by the Commandant of the Marine Corps and higher echelons. The inventory control point reviews and analyzes all reports to pinpoint problem areas and recommends or initiates corrective action when warranted. The remote storage activities also review and analyze their internal reports, and such system-wide reports as they receive, to pinpoint local or system-wide problem areas.

The inventory control point translates the approved supply policy of the Commandant of the Marine Corps and the basic system design into detailed systems and procedures for the stores segment of the Marine Corps supply system.<sup>11</sup> These systems and procedures are based on the system design and

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<sup>11</sup> Ibid, p. A-04-4.





programming for computer processing. The computer programs developed by the inventory control point are accomplished at the remote storage activities as established without change, unless proposals for revision, submitted to the inventory control point are approved. The inventory control point continuously evaluates the effectiveness of the computer programs and initiates corrective action when required. The inventory control point and the remote storage activities mutually resolve any time schedules for computer processing at the remote storage activities for system compatibility. The remote storage activities may use their computer capability for other requirements at such time as there is no conflict with supply system processing.

The inventory control point accomplishes system-wide stores accounting for stock fund and appropriation stores items and maintains the general ledgers for the stock fund and the appropriation stores accounts. The inventory control point prepares and submits reports to the Commandant of the Marine Corps relative to stock fund and appropriation stores account items, and financial transactions for principal in-use items. It further prepares and submits budget estimates and financial plans to the Commandant of the Marine Corps for all stock fund and appropriation stores account materiel procured by the inventory control point. The inventory control point also accumulates data required to assist the Commandant of the Marine Corps in evaluating field budget submissions for decontrolled stock fund items.

The inventory control point provides professional advice, guidance, or assistance to the remote storage activities in administrative and functional areas.<sup>12</sup> It provides all required cataloging services (stock numbering, substitutability, interchangeability, and standardization) and maintains a central

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<sup>12</sup> Ibid, p. A-04-6.

[illegible]

The inventory control point responsibility system with respect to stock fund and appropriation should first and foremost be placed for the stock fund and the appropriation share account. The inventory control point prepares and submits reports to the Commission of the Inter-City relative to stock fund and appropriation share account fund and financial transactions on principal in-use items. It further prepares and submits related estimates and financial plans to the Commission of the Inter-City for all stock fund and appropriation share account related projects. The inventory control point The inventory control point also submits the report to the Commission of the Inter-City regarding the inventory control point.

The literature would provide additional support, however, to the view that the process of adaptation is a gradual one.<sup>12</sup>



repository of technical data that will provide for indexing, storage, retrieval, and maintenance of engineering drawings and related data for all Marine Corps items, which are available to the remote storage activities on request. Further, in addition to the computer-produced reports that have been programmed under MUMMS, the inventory control point produces such additional management information reports as may be needed and requested by the remote storage activities.

### Summary

This chapter has presented an overview of MUMMS operating procedures, computer concepts, and command relationship between the inventory control point and the remote storage activities. Chapters II through IX devote themselves to an examination and appraisal of each independent subsystem within MUMMS.

[illegible]

This chapter has reviewed the literature of child's growing awareness of mental operations, and potential relations between the growing understanding of mental states and the growing understanding of the physical world. The chapter is intended to provide a basis for an understanding of the child's growing awareness of the physical world, and the growing awareness of the child's growing awareness of the physical world.

## CHAPTER II

### INVENTORY CONTROL

The inventory control subsystem provides central control of stocks, issues, receipts, and requirements. Inherent is the ability to segment the inventory in the central computer record by purpose, condition, project, and location; control the issue, pass, and backorder routines; produce status for the customer automatically; forecast demand; compute stock levels and attain requirements; and allow the managers to identify requirements from initial planning to ultimate issue.<sup>1</sup>

#### The Eternal Triangle

The Marine Corps Unified Materiel Management System (MUMMS) recognizes a predominant triangle of parties to the business of supply. They are, first and foremost, the customer; second, the item manager; and third, the project manager. The system was designed primarily to accommodate these parties. Others are also served with various shares of data and performance, but these three stand out.<sup>2</sup>

The customer is anyone who receives materiel or equipment from the distribution system. He is usually an organized unit; but he may be an individual.

"Item manager" is not a generic term used for lack of a better word. It is a person — a living, breathing person — who has a great deal of responsibility

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<sup>1</sup> U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966, p. B-01-3.

<sup>2</sup> U.S. Marine Corps. Inventory Control Manual. MCO P4400.72, October 4, 1966, p. B-01-1.

1

## The African Village

The Marine Corps utilized the Integrated Personnel Management System (IPMS) to manage a fundamental element of service to the business of supply. They also used the system to manage the inventory, the inventory, the inventory, and the inventory. The system was designed primarily to manage the inventory. It was also used to manage the inventory of the inventory, but this was not the primary purpose of the system.

The emphasis is placed on those who themselves handled or supervised those who handled the equipment. It is usually an organized unit, but it may be an individual.

"Team manager," is not a specific term used for each of a better word.

It is a person - a living, breathing person - who has a great deal of responsibility

1. U.S. Marine Corps, Infantry Weapons, 1950, 11-12.

1964, p. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 84



and necessarily a proportionate amount of capability. The inventory control subsystem gives the item manager a streamlined system, the most advanced data processing support, and the widest range of control possible to help him manage his items because that is precisely what he must do—manage. He must know what his items are; where they come from; where they are; what condition they are in; why there are so many in each location; where they are going; what other items they relate to; and what can happen if they are not where they are needed.

The project manager, like the item manager, is interested in items, but from a different viewpoint. The project manager is just that—a manager of a project or of several projects. Typical projects which he might be responsible for are a new end item coming into the system, a particular government furnished material contract, a scheduled repair project, a family of weapons, or a weapons system. He spends much of his time gathering information, planning schedules, and checking on others to see that things get done.

### Management by Exception

Management by exception in its simplest terms means that the majority of business goes along routinely by itself, while close attention is paid only to problems.<sup>3</sup> It is an admirable approach, but seldom really followed. What usually happens is that problem situations are carefully identified, and then everyone concerned staggers along under a load of computer-produced reports which tell about those situations and what the computer has done with them. The difficulty lies in being truly selective in deciding what is to be handled as exceptions. Many organizations which espouse the exception technique have installed systems which produce a report every time an item needs to be bought,

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<sup>3</sup> Ibid.



and, consequently, a tremendous amount of ingenuity. The business leaders everywhere give the new manager a tremendous amount of freedom and authority. This freedom is not only in the form of financial resources but also in the form of political resources to help him manage his firm because this is precisely what he needs. Although he will have to deal with the firm's internal affairs and with the outside world, he will have to deal with the firm's internal affairs and with the outside world. They are in the firm and so much so that he will have to deal with the firm's internal affairs and with the outside world. With these firms, the only way to deal with the firm's internal affairs and with the outside world is to deal with the firm's internal affairs and with the outside world.

[illegible]

Management is concerned with the efficient use of resources and the achievement of organizational goals. It involves planning, organizing, leading, and controlling the organization's activities. Management is a process that involves the use of authority and power to influence the behavior of others in order to achieve the organization's objectives. Management is a function that is performed by individuals and groups within an organization. It is a process that is continuous and dynamic, and it is essential for the success of any organization. Management is a discipline that studies the behavior of individuals and groups in organizations, and it seeks to develop effective management practices that can be applied in a variety of organizational contexts. Management is a field of study that is both theoretical and practical, and it is essential for the success of any organization. Management is a process that involves the use of authority and power to influence the behavior of others in order to achieve the organization's objectives. Management is a function that is performed by individuals and groups within an organization. It is a process that is continuous and dynamic, and it is essential for the success of any organization. Management is a discipline that studies the behavior of individuals and groups in organizations, and it seeks to develop effective management practices that can be applied in a variety of organizational contexts. Management is a field of study that is both theoretical and practical, and it is essential for the success of any organization.

or an end item is out of stock, or a requisition needs to be passed to another supply source. Each of these situations might appear exceptional when considered in an environmental vacuum. However, in the day-to-day bustle of actual operations, all of these situations and hundreds more are perfectly normal, rather than exceptional.

The system designers of the Marine Corps Unified Materiel Management System have seriously attempted to envision the item manager in a real-life situation. They have tried to design for him, computer support and procedures which are realistic and practical. The main maxim has been to give the item manager only the problems which the computer cannot handle. This approach allows the item manager to concentrate on the real exceptions while the computer is handling the routine ones. Many performance counters are built which are used to produce reports telling how the computer is doing with the majority of the business. In addition, the computer and files are accessible if there is need to query them.<sup>4</sup>

### Control

Identifying exceptions and reporting them to the item manager is one thing; giving him the means to do something about them is quite another. The item manager at the inventory control point is responsible for all of his items in the system. He may allow some of his items to be stocked in direct support-type outlets which are supervised by personnel in the remote storage activities, and he may even decontrol some of those stock for local procurement; but the ultimate responsibility for good supply support of his items is still his. The balance of this chapter will be devoted to the various means given the item manager for exerting as much control as he needs.

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<sup>4</sup> Ibid, p. E-01-2.

as an end item to put in stock, as a warehouse item to be passed to another supply source. Each of these situations might require a different type of action in an inventory system. However, in the day-to-day details of stock operations, all of these situations and decisions must be handled uniformly, rather than separately.

The system designers at the Boston Group limited detailed descriptions of the system to a summary of the system. The system is a computerized inventory control system. They have tried to design the best computer system and hardware which are feasible and practical. The data system has been to give the data manager with the programs which the computer needs to handle. The system allows the data manager to determine on the data computer with the computer in handling the system. Many procedures are used and data are used to need to produce reports which the computer is able to do. The system of the system is which the computer and data are used. It is a good system.

Control

Inventory systems and inventory data to the data manager is one thing. Giving him the means to do something with that data is quite another. The data manager at the inventory control point is responsible for all of the data in the system. He may allow some of his data to be used in other systems-type systems which are reported to personnel in the system through individual and he may even discuss some of them with the data manager. The data manager is responsible for good supply support of the data in the data. The balance of the system will be found in the system which gives the data manager the means to work with the data.



## Distribution Patterns

Four basic distribution patterns are provided in the system which are necessary to obtain the needed flexibility to respond to fluctuating Department of Defense and internal policies.<sup>5</sup> The echelon code is used to determine which distribution pattern is desired on an item. The inventory control point determines the pattern to be used for each item in the system except for Headquarters Marine Corps sponsored items.

For echelon code 1 items, a system-wide pattern is used. All system-wide stock is made available routinely, if needed, to any customer. Stock levels are based on its share of the total system demand.

For echelon code 2 items a coastal pattern is used. Support is provided on a coastal complex basis (east and west). All stock in a complex is made available routinely, if needed, to any customer in that complex; but stock in one complex is not made available routinely to a customer in another complex, although it may be made available on an exception basis. Stock levels are based on complex demand. Each remote storage activity receives stock, based on its share of the total complex demand.

For echelon code 3 items a restricted pattern is normally used. These items require "materiel planning study" management, and the requirements determination, or procurement, or issue approval is retained by Headquarters Marine Corps. Support is normally from the supply center remote storage activity functions, regardless of demand.

For echelon code 4 items, it is necessary to provide a mixture of centralized and decentralized control on the same item. Each remote storage activity is authorized to compute its own stock levels and buy stock for these levels; but

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<sup>5</sup> Ibid, p. B-01-3.





these levels are only based on general issue demands of local on-base customers and those in adjacent areas. They are not based on demands of customers who are distant from the remote storage activity or on demands for project requirements. The inventory control point also computes stock levels, on a coastal basis, and buys stock for these levels; but these levels are based only on the general issue demands of all customers not covered by the remote storage activities. This pertains especially to overseas customers. The inventory control point does everything routinely for the stocks of those items which it buys. In addition, the inventory control point still buys stock to cover all project requirements throughout the system for these items.

For echelon code 5 items, all supply support is provided by each remote storage activity for its local customers. All items are bought and stocked in the direct support-type outlets at each remote storage activity. If the inventory control point decides to support the demands of any customer who is too distant for direct remote storage activity-type support, that item cannot be assigned echelon code 5. Likewise, an item cannot be assigned or retain an echelon code 5 designation if any subsystem generated a project requirement for it.

#### New Item Entry

New items are added to the supply system from three major sources: provisioning, integrated/single managers, and customer/project manager requests.<sup>6</sup> Except for Headquarters Marine Corps-sponsored echelon code 3 items, the inventory control point is responsible for deciding whether or not an item will be accepted in the system and for determining the most appropriate distribution pattern for it. Generally, items sponsored by integrated and single managers must be accepted if they replace items which are in use, or are

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<sup>6</sup> Ibid, p. B-01-3.

These points are only based on general ideas of course of thought and should be adjusted to the actual situation. They are not based on any scientific or statistical basis. The points are only based on the general ideas of course of thought and should be adjusted to the actual situation. They are not based on any scientific or statistical basis. The points are only based on the general ideas of course of thought and should be adjusted to the actual situation. They are not based on any scientific or statistical basis.

The results are as follows: all points are based on the general ideas of course of thought and should be adjusted to the actual situation. They are not based on any scientific or statistical basis. The points are only based on the general ideas of course of thought and should be adjusted to the actual situation. They are not based on any scientific or statistical basis. The points are only based on the general ideas of course of thought and should be adjusted to the actual situation. They are not based on any scientific or statistical basis.

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coded as acceptable substitutes or interchangeables by the sponsor. If customers or remote storage activities report problems with them, the inventory control point must then take necessary action with the sponsor to improve or delete them from the system. When a customer or project manager wants to get a new item added to the system, either for peacetime usage or war reserve, he must provide specified data for analysis. Using all sources of item data and current stockage criteria, the inventory control point decides what to do. It either rejects the request or adds the item, specifying the applicable distribution pattern.

### Supply Data

Supply data are the vast number of codes, dates, numbers, quantities, and names used to run the supply business. They are the verbs, adverbs, nouns, and adjectives of the supply language. Many of them are incorporated in the master inventory file and other related files, thus making them accessible to, and usable by, the item manager. They show up in reports, transactions, and other communications to him; and he must know them, know what they are for, where they are from, and to what other data elements they relate. They are his means of telling the system what to do with his items and for the system to tell him what it has done. The most important for item management and control are control codes, selected item management indicators, and interchangeability and substitutability codes.

The key to good management is control.<sup>7</sup> In order to obtain good item management, the item manager is given a key to many control doors in the computer processes. These doors are called control codes. If the manager locks none of the doors on an item, he will see very little of that item and the

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<sup>7</sup> Ibid, p. B-02-1.





transactions for it, unless a real exception condition develops. This approach gives him the maximum amount of time to handle other items which require more control. If he locks all of the doors, he will be able to manage very few items because he will see every transaction and will have to approve every response the computer needs to make. Control codes apply to allocation factors, dollar adjustments, input transactions, materiel release orders, obligations, passes, procurement, quantity adjustments, redistribution issue, remote storage activity sequence, stock levels, and condition codes. The computer keeps track of the date each of these codes was assigned to each item. In this way, automatic reminder reports are generated, when required, to confirm the need for a control or remove it.

Many items are managed in certain groups. By use of selected item management indicators, item managers can label items as to their group characteristics. Any one item may fall in several groups and can be labeled separately for each group. Item managers can call for information on items by their groups, and the computer can recognize and use these group indicators for making its required decisions.

Interchangeability and substitutability codes were adopted to control family items. Not only can items to a family be identified, but also their relationships within the family.<sup>8</sup>

#### Demands and Allocation Factors

In the remote storage activity header records of the master inventory file, fields are provided for recording recurring and nonrecurring demands. When processing requisitions, the computer determines which type of demand applies,

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<sup>8</sup> U.S. Marine Corps. Introduction Manual. MCC P4400.70, June 28, 1966, p. B-01-3.





and adds the quantity requested to the appropriate demand field. At the same time, it also adds one to the appropriate demand movement counter. There are three highlights in this process. First, requisitions only are treated as demands. Second, demands are recorded against the remote storage activity nearest the requisitioner, even if the item is not stocked there or if the consignee is different from the requisitioner. Third, demands are recorded against the requested item in an interchangeability and substitutability family, even if that item is not the most preferred. The computer recognizes demands of all items in a family when computing stock levels for the family.<sup>9</sup>

The computer forecasts demands for items periodically. It forecasts some items monthly, some quarterly, others semiannually, others seasonally, and some not at all. This is quite different from some systems which only compute an item when its assets equal or break a reorder level. A forecast code identifies the forecast period desired for an item. It may be assigned by an item manager; but normally, it is assigned by the computer. Certain usage data are accumulated in the master inventory file for one forecast period. At the end of each period, the accumulated data are transferred to the item history file. Thus, these data fields in the master inventory file are blank at the beginning of each forecast period; they accumulate during the period; and they become blank again to start the next period. The forecast code determines the length of each period.

When it is time to forecast demand on an item, the computer must decide which demands to use. A demand code is provided to determine this. This code is normally assigned by the computer. In some cases, it may be desirable or even necessary to predict demand based on estimates rather than to forecast demand based on historical usage. Demand code zero is provided for these

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<sup>9</sup> U.S. Marine Corps. Inventory Control Manual. MCO P4400.72, October 4, 1966, p. B-10-1.





items, and it must be assigned by the item manager. In conjunction with the forecast code, it is still possible to accumulate usage data periodically on an item but not forecast demand for the item.

Once the computer has selected the appropriate demands to use for forecasting, it applies a technique which screens out improbable demands and adjusts for changing demands. The technique employed uses a programmed device called the tracking signal.<sup>10</sup> Demands are seldom identical for an item from month-to-month. First, an average demand is computed. Once an average demand is computed, how far above it or below it any subsequent demand is, can be measured. The distance from the average is called deviation. Once the measuring of deviations of demands is started, the average deviation for each item can be computed. The type of average used is called mean absolute deviation. Probability is simply a measure of the likelihood that something will happen. Probability is related to the average deviation of demand.

Each time a demand is forecasted, the forecast quantity is recorded. It is the average demand expected. The next forecast compares the most recent demand with the forecast made for the same period. The difference is called forecast error. If the forecast is too high there is a plus error; if too low, a minus error. During each forecast, the sum of errors is computed by adding the most recent error to the sum of all previous errors. The sum of errors shows if an item's demand pattern is relatively stable or changing.

The computer measures the sum of errors against the average deviation. The sum of errors divided by the mean average deviation equals a number called the tracking signal. This number is compared to a table of numbers called tracking limits which are simply the maximum allowable tracking signals

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<sup>10</sup> Ibid, p. E-10-4.





for the items, based on different weighing factors. If the tracking signal exceeds the tracking limit, the item is "out of track." The tracking signal process then determines the probability of the most recent error and either discards it from further processing or adjusts the process to handle it.

All previous demands on an item are not disregarded in favor of the most recent demand. This leads to assigning weights to all previous and most recent demands separately. This is accomplished by use of a demand weighting factor, expressed as a three digit decimal assigned by the computer. Once the computer has determined which demands and weighting factors to use, it computes a demand forecast quantity. This is the quantity of demands expected during the next period and is really an expected average demand. A technique called double exponential smoothing is then used. Basically, the computer calculates two weighted averages; balances them against each other; and ends up with a third, which is called the forecast.<sup>11</sup>

### Requisitions

Requisitions are received from authorized Marine Corps and other supported requisitioners, from other services as a result of interservice supply support agreements and Department of Defense excess utilization procedures, from commercial contractors, and other assorted sources. Requisitions are in Military Standard Requisitioning and Issue Procedures format, and are received via AUTODIN, mail, message, and telephone. All requisitions are entered immediately into the inventory control program. Those with priorities 1 through 8 are processed immediately; those with priorities 9 through 20 and 99 are deferred to a standby status for batch processing.

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<sup>11</sup> Ibid, p. B-10-4.





The next step involves more detailed edit of each requisition by the computer. It requires examination of some elements in the requisition, comparison of other elements with these in the item header record, a check of certain control codes in the item header which might block further processing, makes a maximum release quantity check, and changes requested stock number, unit of issue, and quantity, as applicable. Based on this edit, requisitions are rejected, suspended, corrected or approved. Corrected and approved requisitions are processed further immediately by the computer.

Since all requisitions are submitted to the inventory control point, the computer determines which remote storage activity supports each requisitioner and which remote storage activities will be checked for assets to release. The inventory control point maintains a reference table which is used by the computer program for determining supporting and alternate remote storage activities for requisitioners. For each requisitioner, the table contains a code assignment which designates the supporting remote storage activity and alternate remote storage activities in the order of their geographical proximity to the requisitioner.<sup>12</sup>

Material release orders are issued by the inventory control point to a remote storage activity to release and ship the material. Material release orders are normally prepared by the computer, recorded in the document control file, and transmitted to the remote storage activity via AUTODIN.

Material release confirmations are then prepared by the remote storage activities to confirm issues directed by material release orders. Material release confirmations are transmitted via AUTODIN from the remote storage activities to the inventory control point, where the computer program matches

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<sup>12</sup> Ibid, p. C-02-2.

[illegible]

There are two main reasons for this. First, the Commission has not yet received any information from the Government of the Republic of China (Taiwan) regarding the situation in the area. Second, the Commission has not yet received any information from the Government of the Republic of China (Taiwan) regarding the situation in the area.

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them with the corresponding issues in the issue control file. The confirmations are recorded on that file, and billing output is produced for the stores accounting subsystem.

Materiel release denials are prepared by remote storage activities to notify the inventory control point of warehouse refusals on materiel release orders and are transmitted via AUTODIN. The computer program matches them with the corresponding issue in the document control file. The materiel release denials are recorded in that file, and the unfilled quantity is automatically re-entered in the processing routine. The denied item at the denying remote storage activity is automatically locked out for spot inventory and remains locked out until an inventory count transaction is received from the remote storage activity.

Exception status is furnished when any nonpositive supply availability decisions, alone or in combination, are made.<sup>13</sup> Included are backorder, procurement for direct delivery, partial issue, substitution, change of unit of issue, requisition returned, cancellation acknowledgement, and any circumstance which predicts that issue may not be made within the timeframe established for the priority or which requires the customer to change his records.

Cancellations are submitted to cancel previously submitted requisitions. The computer program matches them with the corresponding requisition in the document control file or transaction history file. If release has not already been ordered, the appropriate quantity is cancelled and status is produced. If release has already been ordered, the cancellation is not made and supply or shipment status is produced.

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<sup>13</sup> Ibid, p. C-11-1.





### File Maintenance

Daily, all files in the inventory control subsystem require some degree of maintenance. During maintenance processing, all files are online and are updated in an integrated manner. Although some processes are done less frequently than daily, they are accomplished, when required, as an integral part of the daily file maintenance process. The computer keys on date and conditions within the files to control calling files and sequencing maintenance events within the overall process.<sup>14</sup>

### Summary

This chapter has attempted to perpetuate the very critical responsibilities of an item manager; highlight the control given the item manager so that he can properly manage his items; discuss demands and the techniques used for forecasting demand; and briefly explain the requisitioning process. Inventory control is an essential and governing factor in ensuring that the customer gets the materiel that he needs, when he needs it. Although the computer does the majority of the work, the item manager is the key to good inventory control.

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<sup>14</sup> Ibid, p. F-01-1.

The Institution

1905, at that time the institution was a private one, and the management, during the period of its existence, was entirely in the hands of the trustees. It was not until 1905 that it was taken over by the Government, and since that time it has been a part of the public service. The institution has been a success in its work, and it is hoped that it will continue to be so in the future.

History

The history of the institution is a long one, and it is not possible to give a full account of it in this space. It was founded in 1850, and since that time it has been a part of the public service. It has been a success in its work, and it is hoped that it will continue to be so in the future.



### CHAPTER III

#### PROCUREMENT

Historically, the purchasing function of the Marine Corps has been characterized by a minimum of mechanized and maximum of manual processing. New tactical doctrines place increased demands however, on the materiel support system of the Marine Corps to be more highly responsible to the needs of the Fleet Marine Forces. Accordingly, it has been apparent that ways and means be found to expedite the manner in which routine, repetitive procurement transactions are effected. Since purchases not exceeding \$2,500 constitute a major portion of the procurement effort, the need for mechanized procedures was particularly acute in this area.

The procurement subsystem is designed to provide immediate availability of procurement data, including purchase descriptions, past and potential suppliers, numbers of outstanding buy recommendations, and status of open contracts. This facilitates the solicitation, evaluation, and award phase of the procurement process.<sup>1</sup>

The objectives of this subsystem are to effect a reduction in administrative leadtime; provide more effective pre-procurement planning; optimize competition; reduce repetitive functions to automated processes; enable procurement personnel to place increased emphasis on source selection, improvement of negotiation techniques, bid evaluation, and facilitate award decisions; and interface with other MUMMS subsystems to permit a systematic interchange of data.

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<sup>1</sup> U.S. Marine Corps. Automated Procurement Manual. MCO P4400.74, June 28, 1966, p. A-01-3.

## CHAPTER II STATEMENT

Historically, the procurement function of the United States has been characterized by a mixture of centralized and decentralized procedures, with the Federal Government having been the primary focus of activity. On the other hand, the private sector has been largely responsible for the development of the procurement function. In the past, the procurement function has been largely a reactive function, responding to the needs of the government. However, in recent years, the procurement function has become more proactive, seeking to anticipate the needs of the government and to provide the necessary resources in a timely and efficient manner. This has led to the development of a more sophisticated procurement system, one that is capable of handling a wide range of procurement activities, from the acquisition of goods and services to the management of complex construction projects. The procurement function is now an integral part of the government's operations, and its effectiveness is crucial to the success of the government's programs and policies.

The procurement system is designed to provide the government with the necessary resources in a timely and efficient manner. It is a complex system, involving a wide range of activities, from the acquisition of goods and services to the management of complex construction projects. The procurement system is designed to be flexible, capable of adapting to the changing needs of the government. It is also designed to be efficient, minimizing the cost of procurement and maximizing the value of the resources acquired. The procurement system is a key component of the government's operations, and its effectiveness is crucial to the success of the government's programs and policies.

The objectives of the procurement system are to provide the government with the necessary resources in a timely and efficient manner. The procurement system is designed to be flexible, capable of adapting to the changing needs of the government. It is also designed to be efficient, minimizing the cost of procurement and maximizing the value of the resources acquired. The procurement system is a key component of the government's operations, and its effectiveness is crucial to the success of the government's programs and policies.



### Concept

In order to satisfy demands of requisitioners and arrange to have needed items on hand when required, this subsystem accelerates the procurement process from the time the demand is made known until the contract is awarded to a commercial supplier.<sup>2</sup> By furnishing a complete procurement package, including information related to previous procurements of the same item; identification of potential suppliers; furnishing of preservation, packaging, packing, and marking data; procurement descriptions; and other pertinent data, the placing of orders with commercial vendors is significantly accelerated. This subsystem processes computer-generated purchase requests and manually originated purchase requests for system buys, as well as requirements for direct delivery of material to using organizations. It provides the ability to furnish procurement history on items acquired from other military sources or procured from commercial vendors. Additionally, items which lend themselves to solicitation from the same segment of industry are combined.

Inherent in this subsystem is the requirement to suspend, in the computer, all purchase requests for which a missing data condition exists. During the "suspense" condition, the computer prints a missing data report and a missing data notice. Failure to input the required missing data within the established timeframe will result in the item being printed on the overage report. When the missing data requirement is satisfied, the computer will print the purchase request. Control of the entire procurement process, beginning with the origination of the purchase request and concluding with the input of data resulting from the award, is centered in the computer.<sup>3</sup>

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<sup>2</sup> Ibid, p. A-02-3.

<sup>3</sup> Ibid, p. A-02-4.



In order to satisfy demands of respondents and findings to have needed items on hand when required, the following procedure for processing forms from the time the demand is made down until the forms are needed by a committee member, is described. It involves a number of steps including information related to previous requirements of the same form, identification of individual members, identification of members, and making data; processing documents, and other related data. The purpose of making this committee member is especially significant. The committee members coordinate general business reports and maintain original records required for future use. It will be necessary to have a copy of material to make organization. It provides the ability to make a copy of history or form required from other related sources to provide form material. Additionally, some other form members are identified. Then the same report of history are provided.

Because in this situation is the requirement to provide in the committee, all parties required for which a report that committee member. During the "response" period, the committee from a report that report and a report that action. Failure to report the required report may cause the committee. Therefore, it will be the case being provided in the committee report. Then the making this requirement is satisfied. The committee will make the business report. Control of the entire committee business report with the individual of the committee report and organization with the form of this meeting from the board is carried in the committee.

1000-1-1-1-1

1000-1-1-1-1

## Process

During the inventory updating, purchase requests are prepared for items indicated to be obtainable from commercial sources. Items recorded on the buy recommendation tape will have been processed through the allotment accounting subsystem to commit funds, and a constructive due will have been recorded in the inventory control subsystem. The buy recommendation is processed against the purchase item description file, procurement history file, manufacturers and dealers address file, and the item file of the technical data management subsystem to record the purchase description; preservation, packaging, packing, and marking data; potential vendors for solicitation purposes; and previous procurement history. When all required data is present, the computer produces a request for quotation. The request for quotation is forwarded to procurement personnel for immediate procurement action. In those instances when mandatory data is missing, the item is recorded in the suspense file. Missing data notices indicating the specific missing elements are furnished to the appropriate organizational component for action. The item is held in suspense pending input of the missing data. When the missing data is furnished, the request for quotation is produced.

In instances when an item is required and the computer has not generated a buy recommendation, the item manager may initiate a manual purchase request. This will cause a request for quotation to be produced if all required data is available for the item. If the mandatory data is not available, missing data notices will be produced; and the buy will be temporarily suspended until the required data is furnished.

From the previous and potential sources listed on the trailer attached to the request for quotation, the buyer selects the field of competition and proceeds with solicitation. When the estimated procurement cost exceeds \$2,500, the request





for quotation and trailer is used as a basis for preparation of an invitation for bids or a request for proposals.

By comparison of the prices received on the solicitation with those on the trailer from five previous buys, the fairness and reasonableness of the current quotation may be readily determined, provided that the conditions of purchase are comparable.

A weekly procurement progress report is produced to show the progress of purchase requests in the procurement processing cycle. The elapsed time from date of initiation of the buy recommendation to date of the particular procurement report is indicated. This provides the procurement manager with an opportunity to investigate cases of undue delay. A monthly report is produced to reflect total administrative leadtime elapsing between the buy recommendation date and date of the award document. This information provides realistic data for procurement planning.<sup>4</sup>

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<sup>4</sup> Ibid, p. B-01-6.

the Government and further is used as a basis for preparation of an outline for the side on a request for proposals.

The Government of the United Kingdom has the intention to submit an offer to the British from the Government. The intention and responsibility of the Government is to submit an offer to the British from the Government. The intention and responsibility of the Government is to submit an offer to the British from the Government.

The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals.

The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals. The Government is responsible for the preparation of the outline for the side on a request for proposals.

## CHAPTER IV

### PROVISIONING

There is a continuing requirement for improving the procedures for supporting new items of equipment being introduced into the Marine Corps. Increased accuracy and timeliness of budget estimates, a close correlation between quantities of repair parts and support equipment requisitioned by field units, and the levels of parts actually procured by the inventory control point for this purpose is mandatory. Closer coordination is also needed to assure the availability of these parts, supporting equipment, supporting publications, and trained technicians and operators to maintain and operate the new equipment. To satisfy these requirements, a provisioning process was established under MUMMS which provides a more dynamic response to the needs of the Fleet Marine Force, a closer control of inventory related to the support of new equipment, a more accurate means of establishing budgetary requirements for the support of new equipments, a meaningful reporting system related to determining support capability for new equipments being introduced into the Marine Corps supply system, and a more sophisticated and responsive method for providing initial levels of support to the organizations authorized new equipments.<sup>1</sup>

#### Definition

Provisioning is a process by which supply support is provided for new end items and weapon systems for the initial usage period. Provisioning is defined

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<sup>1</sup>U.S. Marine Corps. Provisioning Manual. MCO P4400.79, February 3, 1967, p. 1-3.





as the determination of the range and depth of parts required to support an equipment, weapon, or system from the time it is placed in service until the time that actual usage can establish routine inventory management.<sup>2</sup> Repair parts, special tools, and test and supporting equipment are identified, and levels are acquired and protected from issue until the capability is attained to support all of the equipment planned to be placed in service. It is required to effect, on a timely basis, the distribution of these parts, test equipment, end items and publications to field organizations. The provisioning process includes the acquisition of material to support engineering changes, modifications, and unsatisfactory equipment reports.

#### Scope

The provisioning process begins with the establishment of potential Marine Corps equipment objectives in the form of general operational requirement, and research and development phase. It continues with early funding estimates for budgetary planning, the actual selection and acquisition of maintenance parts when the end item goes into production, the distribution of maintenance parts to field users and supporting organizations, and terminates at the end of the usage data reporting period.<sup>3</sup>

#### Policy

The policies and the guidance related to the provisioning process and to placing a new end item, equipment or weapon system into use, and assure that the levels of supply support are sufficient to meet the requirements of the Fleet Marine Force are provided by the Commandant of the Marine Corps.

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<sup>2</sup> Ibid., p. 1-4.

<sup>3</sup> Ibid., p. 1-5.





Further, they direct compliance with policies, plans, and directives imposed on the Marine Corps by higher authority.

General criteria for range and depth in terms of days of supply are prescribed by the Commandant of the Marine Corps for items to be stocked as the initial stocking requirements in support of end items or components being provisioned. Within these general criteria and levels, the inventory control point determines the range and quantitative depth of items necessary to support new end items and components during the usage data development period. This determination includes the initial stocking requirement of garrison operating levels for field units and mount-out requirements where applicable. Participants in the determination include technicians from the inventory control point, the engineering staff of the contractor for the end item, the military service design agency, and the Defense Supply Agency. Staff officers of Headquarters, Marine Corps, who have monitored the development and test of the equipment, assist provisioners by contributing pertinent information acquired during their monitoring. The inventory control point is responsible for obtaining and coordinating participation of appropriate agencies and personnel in the determination.

Guidance in the form of planning data comprises the basic tools which are utilized in establishing support plans for a new equipment contemplated for Marine Corps use. The data, provided as documentation, informs the inventory control point of anticipated equipment procurements, and conversely, of future equipment phase-outs, of specific objectives of equipment deployment plans, of planned changes to the Marine Corps force structure, of the results of evaluation of equipments undergoing testing, and the planned concepts for future support of equipment. This data is known collectively as provisioning planning data.<sup>4</sup>

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<sup>4</sup> Ibid, p. 1-11.



## Responsibility

Responsibilities in the provisioning process are as follows:<sup>5</sup>

1. Headquarters Marine Corps

- a. Issues directives required to effect policies and assures that policy and procedural changes are compatible with the concept of the MUMMS.
- b. Prescribes authorized day levels for the various provisioning strata.
- c. Budgets for the procurement of mount-out and initial stocking requirements of garrison operating stocks for the active Fleet Marine Force.
- d. Assures that the inventory control point is provided all elements of provisioning planning data.
- e. Establishes the target dates for placing new items of equipment in service.
- f. Adjusts target dates as necessitated by the actual availability of resources.

2. Inventory Control Point

- a. Determines the range and depth of items to be procured for initial issues to customers of the stores system, for supporting stocks within the stores system, and for the mobilization requirements to be retained within the stores system.
- b. Determines the range and depth of the mount-out, mount-out augmentation, and the initial stocking requirements of garrison

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<sup>5</sup> Ibid, pp. 1-12 through 1-15.



Information in the following format is as follows:

# 1. Inventory Control System

a. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

b. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

c. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

d. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

e. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

f. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

# 2. Inventory Control System

a. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

b. Inventory Control System is a system that policy and procedure changes are developed with the company of the company.

operating stocks for units to be equipped and their supporting units.

- c. Estimates operation and maintenance funds required to finance Fleet Marine Force mount-out stocks and initial stocking requirements of garrison operating stocks to support new equipments.
- d. Estimates operation and maintenance funds to finance consumption of garrison operating stocks to support new equipments.
- e. Provides a provisioning performance report to the Commandant of the Marine Corps, on a scheduled basis, for each equipment in the provisioning cycle.
- f. Assures that adequate methods are utilized to protect assets of material acquired to support each new equipment from being subject to general issue prior to the authorized date for distribution of the initial issue.
- g. Provides listings to the force commanders which cite levels of each repair part resident in protected status.
- h. Provides the actual cost of the initial issue for each using and supporting organization to the Commandant of the Marine Corps.
- i. Determines and acquires the levels of those special spare parts that are required as part of the initial installation in order to make the equipment operative.

#### Provisioning File

The inventory control point maintains a provisioning file. The purpose of this file is to record provisioning requirements and control data for repair parts and special tools required to support end items of equipment for an initial

operating under the same in an approved and fully equipped  
unit.

6. Information operation and maintenance work required in these  
first three years must be done and full training  
requirements of various operating units to report on  
equipment.

7. Information operation and maintenance work in these units  
of various operating units to report on equipment.

8. To provide a permanent maintenance report to the command  
of the United States, as a national bank, in each operating  
in the permanent unit.

9. Various and various methods are required to provide work  
of material required to report and not required for  
being subject to general rules in the national bank in  
the interests of the national bank.

10. Various duties in the first communication with the bank  
of each unit required in national bank.

11. To provide the actual cost of the initial bank for each unit  
reporting operation to the command of the United States.

12. Information and equipment the bank of these units  
that has not required in part of the bank operation in  
order to make the equipment report.

#### Transferring the

The necessary control point remains a continuing life. The purpose of  
this is to record government requirements and control over the report  
points and special tools required to report and those of equipment in an initial



period of service.<sup>6</sup> The provisioning file is used to record those data elements from the time the provisioning project has been established, through the period when the range, depth, and quantities of repair part support are determined, extending until the equipment has been placed in service. The file is used for loading provisioning requirements, by their intended purpose, into the projects requirement file, and ultimately, into the master inventory file.

Provisioning requirements are loaded into the provisioning file progressively throughout the period in which requirements are being determined. All requirements and data must, to the maximum extent possible, be loaded a "procurement-lead-time" in advance of the projected ready-for-issue date. This is necessary in order to determine the status of parts required for initial issue by comparing the requirements against the releasable assets and cues.

The provisioning file is updated daily if computer time permits.<sup>7</sup> Item additions, deletions, and quantitative changes may be made up to the provisioning cut-off date. Price changes and unit of issue changes may be made to the file at any time during the provisioning process up to the time the initial issue listings are run. Changes occurring prior to the date of the file cut-off which change management from service managed to integrated management or vice versa, will cause a recomputation of stock requirements. Changes which occur subsequent to this date will not cause a recomputation of requirements.

The inventory control point prepares a report from the provisioning file each month listing all projects in progress. The report indicates those projects that have been established but are in an inactive status. The report also provides data for those projects which are in an active status in that the

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<sup>6</sup> Ibid, p. 6-3.

<sup>7</sup> Ibid, p. 6-4.



provisioning process had advanced to the point where scheduling has been accomplished for the major events occurring during the provisioning cycle. The effectiveness of performance is cited for each scheduled major event. When the effectiveness of performance indicates that slippage in meeting planned schedules will adversely affect planned ready-for-issue dates, the report also indicates and recommends a revised ready-for-issue date and initial issue date.<sup>8</sup>

### Summary

This chapter has defined provisioning, given its scope and policies, outlined responsibilities of Headquarters, Marine Corps, and the inventory control point, and discussed briefly the provisioning file.

Provisioning is a very complex process. Because of this, it was necessary for the Department of Defense to prescribe certain command relationships and to set down coordination ground rules. These will not of themselves accomplish the task, but they provide the framework within which the individual service can provide the timely support necessary to put an end item in service and maintain it.<sup>9</sup>

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<sup>8</sup> Ibid, p. 6-7.

<sup>9</sup> U.S., Department of Defense, Policy and Principles Governing Provisioning of End Items of Material, DOD Instruction 3232.4, April 2, 1956, pp. 1-2.





## CHAPTER V

### FINANCIAL MANAGEMENT

The methods of computing requirements for secondary items and repair parts, and the techniques and procedures used in determining the most effective stock balances, are controls which determine the quantities of supplies in the system. Strategy, materiel policy, and the size and composition of the Marine Corps are also controlling factors which have an effect on requirements determination. None of these, however, can be separated from the economic and fiscal control which help management formulate adequate plans and determine effectiveness of operations. The Marine Corps must receive the greatest return for each defense dollar it spends for military preparedness. It must maintain an effective military posture while simultaneously cutting costs wherever possible, and control its assets through effective management techniques.

Since money is a limiting factor in procuring and distributing supplies, fund limitations often require that difficult decisions be made. The dollar is the accepted common denominator which is used to measure effectiveness of requirements management and determine where financial resources will be best applied.<sup>1</sup>

#### Budget Data

The budget data subsystem extracts, accumulates, and projects basic data which is summarized in different ways for various budget and financial management reports. Materiel requirements and financial assets are collated

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<sup>1</sup> U.S. Marine Corps. Budget Data Manual. MCO F4400.83, March 21, 1967, p. v.

Since money is a limiting factor in providing and distributing supplies, food distribution often requires that certain decisions be made. The object of the analysis is to determine whether it may be possible to improve the distribution of supplies and services when financial resources are limited.

[illegible]



into an accurate determination of deficiencies by time-sequence. The product of this system is a coherent, justifiable request for peacetime operating stock funds and mobilization funds. It is supported by a variety of prescribed and internal analyses. This subsystem also accumulates, analyzes, retains, updates, and projects provisioning funding requirements for new end items. It produces a refined workable budget document which includes gross requirements, net funding requirements, and a sales forecast.<sup>2</sup>

The inventory objectives, the inventory posture, and the funding deficiencies are developed quarterly. This data is furnished to the stores accounting subsystem for use in conjunction with the stores and general ledger data in preparation of the stock fund operating budgets in the areas of peacetime operating stocks, mobilization, and provisioning. Requirements for provisioning are developed on the basis of cost experience for like or similar end items.

Itemized peacetime operating stock funding deficiencies are supported by shopping lists which show the item deficiencies by time period. Mobilization funding deficiencies are supported by itemized and fractionated shopping lists. This technique permits balancing of war reserve stocks where only limited funds are available to procure the deficiencies.

Each item is classified, stratified, and summarized into one of four segments: insurance, provisioning, reparable, and nonreparable.<sup>3</sup> Summaries by segments are produced for each management code, echelon code, and stores account code combination. Reviewing officials are provided with the necessary media for examining the inventory by logical segment, totally or by echelon.

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<sup>2</sup> U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 23, 1966, p. B-12-3.

<sup>3</sup> Ibid. p. B-12-3.





During the stratification process, items which meet selected criteria are extracted for individual review. The dollar stratification report is printed out for each selected item, and a stock status report is forced for each item selected. Both of these documents are used as backup data for high deficiency items as well as for post-stratification review by internal and external auditors.

As each item is stratified, item deficiencies are developed for each time-sequence or issue period. These item deficiencies are extracted into a procurement program file which is used as the basis for the inventory control point spending plan for the current and apportionment year. Periodically, procurements in process are matched against the procurement forecast and analyzed. Reasons for the variance are detected and are used as the basis for developing revised funding requirements.

During the process of developing the provisioning budget, consideration is given to the end item procurement date which is plotted against the provisioning cycle milestones. Determining the quarter and fiscal year in which the provisioning funds are actually required, precludes premature funding, thus reducing the time interval between the investment date and the sales date of the provisioned materiel.

Management is provided with a forecast of when the sales of the stock fund provisioning investment will materialize. The period of the initial issue sales as well as the period and amount of the system stock sales is developed. Funds invested are generally of the same materiel category as the end item; however, sales of the spare parts will not necessarily materialize in the funding materiel category. The sales forecast provides the distribution of sales by materiel category.<sup>4</sup>

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<sup>4</sup> Ibid, p. E-12-4.





## Stores Accounting

Stores accounting involves elements of property, financial, and cost accounting for receipts of materiel into the custody of a supply officer and subsequent expenditures of such materiel. The property accounting phase covers an analysis of receipts and expenditures by type under each stores account. The financial phase involves an analysis of receipts and expenditures by appropriation or allotment. The cost accounting phase is an analysis of expenditures by fractional account number and object classification. The records and reports required to accomplish analyses of receipts and expenditures of materiel are an integral part of stores accounting. Since Marine Corps stores are maintained under a perpetual inventory system, the accounting procedures required are designed to provide accurate usage data for determination of recurring requirements, and for support of appropriation requests made in the budget covering material, supplies, and equipment.<sup>5</sup>

Stores accounting is designed as a totally automated operation within the central computer program. The basic policies and operational concepts governing this accounting function provide a uniform method of integrating inventory and financial transactions in order to maintain ledger accounts for the Marine Corps Stock Fund and the Marine Corps Appropriation Stores Account, and to produce the financial statements required for financial and supply review.

The objectives of the stores accounting subsystem are:<sup>6</sup>

1. To provide a system of sound financial and supply management for all inventories controlled by the inventory control point, as well as for decontrolled items under the cognizance of the remote storage activities.

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<sup>5</sup>U.S. Marine Corps. Stores Accounting Manual. MCO P4400.73, September 22, 1967, P. A-01-1.

<sup>6</sup>Ibid., p. A-01-2 and A-01-3.





2. To assure adequate financing for the maintenance of approved inventory levels of operating stocks, authorized reserves and related on-order quantities.
3. To provide for the value of all inventories of materiel under the accountability of MUMMS to be held under general ledger control.
4. To generate timely and accurate inventory management reports and financial statements for use by higher echelons.
5. To provide for billing and collection for reimbursable issues by the inventory control point on confirmation of shipment from the remote storage activity furnishing the materiel.
6. To establish standard unit prices for new items entering the distribution, and to review and revise standard unit prices for established items.

Stores balance records are maintained to account for the value of all inventories of materiel, supplies, and equipment held as stock on records of accountability in the Marine Corps distribution system. In addition, the stores balance record reflects the financial value of materiel positioned at designated retail issue activities for ready access to authorized customers. The record provides for the value of materiel on hand at each bulk storage location and retail issue point classified by stores account code, remote storage activity, federal supply classification, management echelon code, purpose, and condition.

The subsystem receives transactions that affect the Marine Corps Stock Fund and Marine Corps Appropriation Stores Account item inventory records and direct stock control records; computes the dollar value of the transactions; and simultaneously, updates both the stores balance records and the Marine Corps Stock Fund and Marine Corps Appropriated Stores Account general ledger accounts. These transactions are also accumulated into various files to

5. To ensure adequate financing for the maintenance of approved inventory levels of operating funds, estimated resources and related measures provided.

6. To provide for the value of all investments in operating assets for accountability of activities in the field under general budget control.

7. To provide timely and accurate inventory management reports and financial statements for use by higher activities.

8. To provide for billing and collection for reimbursement based on the inventory control point on completion of shipment from the central storage activity providing the material.

9. To establish standard unit prices for use in the activity for distribution, and to review and revise standard unit prices for established items.

These inventory systems are designed to ensure the value of all investments in material, equipment, and supplies held in stock in terms of accountability in the active Corps distribution system. In addition, the active balance record reflects the financial value of material provided to designated total issue activities for ready access to subsequent activities. The record provides for the value of material on hand at each active storage facility and which issue point classified by active storage unit, storage activity, activity, activity classification, management activity code, category, and condition.

The inventory system is designed to ensure that the active Corps stock fund and active Corps distribution system account for inventory activity and direct stock control activity. The active value of the investment and activity, together with the active balance records and the active Corps stock fund and active Corps distribution system account provide ledger accounts. These transactions are also accounted for in the active ledger accounts.



be used for preparation of bills, management reports, financial reports, budget reports, and reconciliation of supply and fiscal transactions.

### Allotment Accounting

This subsystem is a completely automated system which records funding data from the time the inventory control point initiates a requisition until its funds are liquidated. The system has the ability to distinguish between commercial and military sources; provides the appropriate accounting transaction, and records in the file the commitment and obligation. It also provides techniques for monitoring funds to ensure that over-commitments and obligations never occur.<sup>7</sup>

Beyond the need for controlling the day-to-day operation of the allotment accounting system, there is a need for an audit trail. This is a trail used to describe the means by which the details underlying summary accounting data may be obtained. It also includes methods of locating supporting documentary evidence. It is, therefore, necessary to retain records providing the validity of accounting transactions and the reconstruction of data lost from internal computer memory. This subsystem provides this audit trail by ensuring that balances comprise a control balance at a given date, and that the total of transactions may be traced to an original source document or transaction. It also provides a means of access to supporting documents to establish or reconstruct balances independently.

Inherent in the total system is the means to suspend, in the computer, all inventory control point requisitions when funds are not available. These requisitions are placed in the inventory control suspense file and reviewed on

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<sup>7</sup> U.S. Marine Corps. Automated Allotment Accounting Manual. MCC P4400.86, March 24, 1967, p. 2-1.





a periodic basis to determine the current status of funds. Time restrictions are established for items held in suspense; and, if these items are not removed from the suspense account within the established timeframes, dollars are decommitted.

The allotment accounting file contains the total authorizations allocated to the inventory control point. The file maintains control by total authorization and fund code. This file and the related computer program, maintains control over commitments, authorizations, obligations, and expenditures.

### Summary

Financial management is one method employed to control resources and justify requests for funds. Financial management includes the budgetary process, the collection of financial data, the control of funds by allotment accounting, the reporting of financial information, and an appraisal of operations. MUMMS has attempted to make this a coordinated and controlled process. Only time and experience will determine whether it has accomplished its purpose.

a periodic basis to determine the extent of the loss. This statement  
 are established for each year is required, and it must show the amount  
 from the company account with the subsidiary statement, which are  
 transmitted.

The statement accounting for the loss of the subsidiary statement  
 to the inventory control period. The loss statement must be submitted  
 and first cost. This is the total capital account, including the  
 only accounting, adjustment, adjustment, and adjustment.

### Summary

Financial management is an essential step in control resources  
 and justify progress for each. Financial management includes the following  
 process, the collection of financial data, the control of loss of financial  
 accounting, the reporting of financial information, and an appraisal of operations.  
 Financial management is also the a very difficult and tedious process.  
 Only those who experience will determine whether it is worth the effort.



## CHAPTER VI

### MAINTENANCE MANAGEMENT

Maintenance management at the depot level within the Marine Corps has progressed in the past few years to become well oriented within the concepts of modern industrial management. While this program has been supported to a degree by data processing, the support has been limited to mechanized production of management reports, developed from manually recorded data. The management control systems have relied entirely on manual methods for development of programs and schedules, and for the accomplishment of other management control and analysis functions.

The often extremely wide product mix and short range programming, dictated by the relatively low population of major items of equipment within the Marine Corps, have added further to the complexity of manual methods, and seriously retarded continued development of effective control techniques. To remove these obstacles to continued development, and to ensure that the Marine Corps will possess the most modern and effective maintenance management system possible, full data processing support, along with full coverage by a mechanized data collection system, is a necessity.

With the capability provided by current data processing equipment, mechanization of depot maintenance management is limited only by the skill and initiative of the maintenance managers. This system provides the first step toward maximum, practicable mechanization of the elements within the system. That is to provide, first, an automated data collection system, supported by a random access computer for processing the data generated; second, to establish a series of management reports to permit maximum use of the data





by local managers on a timely basis, and to provide essential data required by higher management levels; and, third, to provide built-in capability for development and application of mechanized management control systems.

The objectives of the depot maintenance manual subsystem are: to establish a standard maintenance management system within depot maintenance activities; to establish standardized procedures for the depot maintenance program, management control systems, and support data collection processing and presentation; and, to establish an automated data collection system as the basic supporting management tool.<sup>1</sup>

The Marine Corps operates two depot maintenance activities. These activities are located at the Marine Corps Supply Centers at Albany, Georgia and Barstow, California. Within MUMMS, these centers are designated as remote storage activities. The depot maintenance activities accomplish major repairs and overhaul of all types of Marine Corps tactical, combat, and supporting equipment, as well as provide direct support to the Fleet Marine Force, in testing and preparing serviceable equipment for shipment to using units.

The missions of the depot maintenance activities are as follows:<sup>2</sup>

1. To return unserviceable equipment to a serviceable condition.
2. To perform maintenance through depot level by repairs, overhaul, or rebuild.
3. To accomplish such modification, fabrication, and assembly as directed.
4. To provide technical assistance and technical inspection services for the Fleet Marine Force and Marine Corps reserve units.

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<sup>1</sup> U.S. Marine Corps, Depot Maintenance Management Manual, MCC P4460.81, February 8, 1967, p. A-01-1.

<sup>2</sup> Ibid., p. A-01-2.



by food managers on a daily basis, and to provide essential data required by higher management levels; and, third, to provide reliable, accurate, development and application of modernized management control systems.

The objective of the first component is to develop a system of management control systems which will provide essential data required by higher management levels; and, second, to provide reliable, accurate, development and application of modernized management control systems. The second component is to develop a system of management control systems which will provide essential data required by higher management levels; and, third, to provide reliable, accurate, development and application of modernized management control systems.

The third component is to develop a system of management control systems which will provide essential data required by higher management levels; and, fourth, to provide reliable, accurate, development and application of modernized management control systems. The fourth component is to develop a system of management control systems which will provide essential data required by higher management levels; and, fifth, to provide reliable, accurate, development and application of modernized management control systems. The fifth component is to develop a system of management control systems which will provide essential data required by higher management levels; and, sixth, to provide reliable, accurate, development and application of modernized management control systems.

The objective of the first component is to develop a system of management control systems which will provide essential data required by higher management levels; and, seventh, to provide reliable, accurate, development and application of modernized management control systems. The seventh component is to develop a system of management control systems which will provide essential data required by higher management levels; and, eighth, to provide reliable, accurate, development and application of modernized management control systems. The eighth component is to develop a system of management control systems which will provide essential data required by higher management levels; and, ninth, to provide reliable, accurate, development and application of modernized management control systems.

The objective of the first component is to develop a system of management control systems which will provide essential data required by higher management levels; and, tenth, to provide reliable, accurate, development and application of modernized management control systems. The tenth component is to develop a system of management control systems which will provide essential data required by higher management levels; and, eleventh, to provide reliable, accurate, development and application of modernized management control systems.

The objective of the first component is to develop a system of management control systems which will provide essential data required by higher management levels; and, twelfth, to provide reliable, accurate, development and application of modernized management control systems.

5. To provide inspection, maintenance, and preservation for in-storage supply center technical stocks.
6. To perform materiel inspection and evaluation as required.
7. To perform quality assurance services.
8. To accomplish test, repair, and calibration of electronics, radac, and mechanical test equipment.
9. To provide maintenance through depot level and calibration support for other military services under inter-service support agreements.
10. To provide technical, on-the-job and apprentice training to develop and maintain proficiency levels in required skills of civilians and Marines in their technical specialities.

The overall maintenance management system contains the Commandant of the Marine Corps repair program, the inventory control point reparable program, and the supply center support program, which together constitute the annual master work schedule.<sup>3</sup>

That portion of the maintenance program, which cannot be identified to specific line items of equipment in advance of the beginning of the fiscal year, is categorized as the supply center support schedule. The supply center support schedule contains both Headquarters, Marine Corps and inventory control point controlled programs, as well as programs managed by the supply center based on locally generated requirements.

The master work schedule is maintained in an up-to-date status at all times. Changes to the line item and quantities contained in the Commandant of the Marine Corps repair schedule are received from the inventory control point as requirement changes occur. Line item changes are estimated and

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<sup>3</sup> Ibid, p. B-01-1.

8. To provide support, information, and resources for the development of the curriculum.

6. To perform statistical analysis and evaluation of results.

1. The following are the names of the persons who have been appointed to the various committees of the Board of Directors of the American Telephone and Telegraph Company, for the year ending December 31, 1910:

1. The results of the study are consistent with the findings of other studies that have shown that the use of a single-pointed needle is associated with a higher risk of infection compared to a double-pointed needle.

16. To provide technical assistance and information relating to testing

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[illegible]

and healthful life. In the morning, the sun is shining brightly, and the birds are singing. The children are playing in the park, and the flowers are blooming. The air is fresh and clean, and the water is clear and cool. The children are happy and healthy, and the flowers are beautiful and fragrant. The air is fresh and clean, and the water is clear and cool. The children are happy and healthy, and the flowers are beautiful and fragrant.

1994-1995

which contains both *Leishmania* and *Trypanosoma* species.

Abstracts beginning with

These changes to the law and judicial system in the 1990s

held as required design point. The first design was evaluated and

1997, p. 100, fn. 8



scheduled by induction and completion dates as the changes are received from the inventory control point. The supply center support program requirements also change as local requirements dictate, and are maintained current within the overall master work schedule requirements. A formal submission of the revised master work schedule, along with an analysis and summary report, is made quarterly.

In developing the master work schedule, all computations are based on net productive capacity (manpower and facility). It is recognized that personnel and equipment are not one-hundred percent available for productive work. Such factors as annual leave, sick leave, training, and equipment availability, based on experience data at each depot maintenance activity, are used to calculate net productive capacity.<sup>4</sup>

#### Material Support

Requirements for repair parts to support the Commandant of the Marine Corps repair schedule and the inventory control point secondary reparable program are established in bills of material by fiscal year upon establishment of the Commandant of the Marine Corps initial repair program. All material, whether bills of material or for center support, is ordered with a required delivery date as close as possible to the anticipated date of induction of each batch of each job to be performed.

Depot maintenance activities initiate requirements for bills of material for secondary reparables in the same manner as for major end items. The required delivery date for secondary reparable bills of material are based upon the estimated dates of induction of each economic batch quantity. A bill of material flow chart is shown as Figure 3 on page 49.

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<sup>4</sup>Ibid, p. B-02-3.



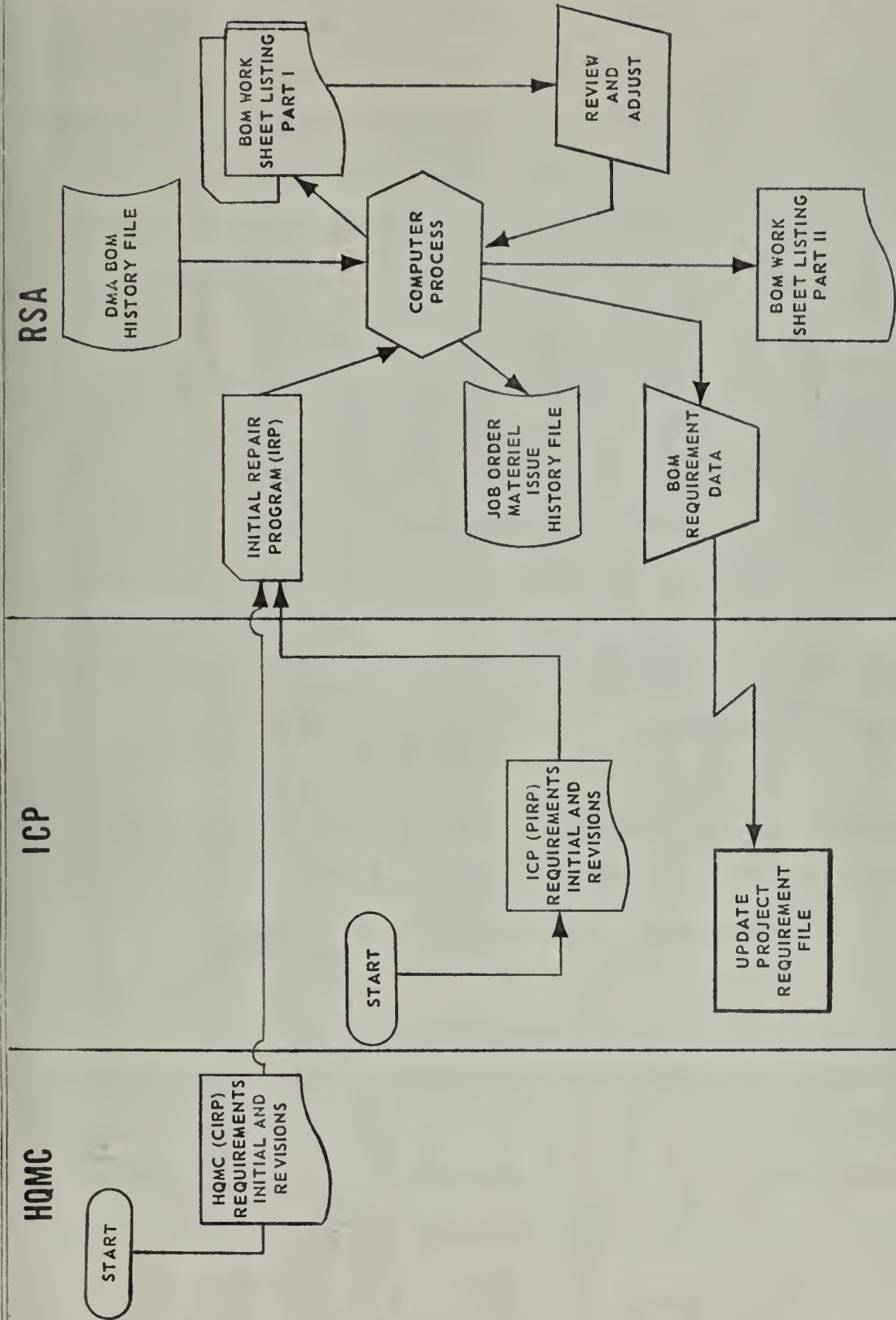


Figure 3.— BILL OF MATERIEL FLOWCHART

Source: U.S. Marine Corps. Depot Maintenance Manual. MCO P4400.81, February 8, 1967.





## Management Systems

The internal control and analysis systems and programs, which provide basic support to the depot maintenance activity management effort, are industrial engineering, production control, and quality control programs, in addition to management reporting and analysis. These systems and programs are effective only when supported by a timely and effective data collection and reporting system.

The industrial engineering program provides industrial support for the entire depot maintenance activity. Work cannot be inducted into the facility without the prior formulation of necessary input data for process plans, time allowances, and work unit identities. The development of reliable, quantitative measures of performance and process plans to provide this input data is a vital function of this program. Specific objectives of this program are to:<sup>5</sup>

1. Provide engineering and technician services to the depot maintenance activity and to other remote storage activity functions and higher authority.
2. Conduct engineering studies; develop new and improved methods to increase production effectiveness; develop, maintain, and evaluate engineered performance standards; and prepare detailed job process plans.
3. Provide basic input data for the automated data collection system in the area of equipment item identification and procedures, labor standards, personnel requirements, and sequence of operations.

The production control system provides the basic planning effort, and controls the productive effort of the maintenance activity in the accomplishment

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<sup>5</sup> Ibid, p. C-02-1.

The internal control and analysis system and program, which provide basic support to the input maintenance activity management effort, are substantial engineering, production control, and quality control programs. It includes management reporting and analysis. These systems and programs are effective only when supported by a strong and effective data collection and reporting system.

The technical engineering program provides technical support for the entire input maintenance activity. Work cannot be performed in the daily effort the prior formulation of necessary input data for process plans, time estimates, and work cell identities. The development of reliable, quantitative measures of performance and process plans to provide this data is a vital function of this program. Specific objectives of this program are to:

1. Provide engineering and technical services to the input maintenance activity and to other related activity functions and support activities.

2. Conduct engineering studies, develop new and improved methods to improve production effectiveness, layout, methods, and control engineering performance standards; and prepare detailed job process plans.

3. Provide basic input for the development and refinement of standards, production control, layout, methods, and equipment of operations. The production control system provides the basic planning effort, and controls the productive effort of the maintenance activity in the manufacturing



of its industrial mission. The functions of production control are defined as planning, scheduling, in-shop control and progressing, and supply support.<sup>6</sup> Planning provides for advance development of detailed plans, programs, and procedures to use manpower, machines, and funds effectively and economically. Scheduling involves the effective schedule of work into and within specific shops. In-shop control and progressing is the control of a job by time, materiel application, and movement by in-shop control centers. The purpose of these centers is to control all in-process efforts toward movement of work as scheduled, requisition materials as required, and maintain overall cognizance of job progress. The supply support element is established within the depot maintenance activity to provide for the requisitioning, receipt, movement, and issue of materiel required for day-to-day shop operations.

Quality is defined as the characteristic with which an item of equipment conforms to either the designed end use or the degree of conformance with the established design.<sup>7</sup> Performance level is the degree of confidence with which an item of equipment can be expected to perform its designed function. A quality control system is the system which assures compliance with an established quality standard in order to achieve a stated performance level. The quality control system of the depot maintenance activity is designed to provide for the establishment of process quality standards. These standards provide for detection of defects, during both in-process and final inspection. They also provide for effective evaluation of inspection data to assure control of all aspects of the production operation to achieve the specified performance quality standard of end item performance.

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<sup>6</sup> Ibid. p. C-03-1.

<sup>7</sup> Ibid. p. C-04-1.

of the industrial mission. The function of production control was defined as planning, scheduling, inventory control and transportation. The study provided the various development of related theory, processes, and procedures for the management, production, and control systems and systems. Scheduling involves the effective selection of work jobs and work orders. In-plant control and programming is the control of a job in plant, production application, and recovery by in-plant control control. The control of those systems is to control all the production systems in the plant as a whole. Production control is required, and control is the management of the production. The study suggests that the control system is the most important system in production for the production, control, inventory, and control system. The study for production control also suggests.

The quality control system is designed to provide the following functions:

- (a) To provide for detection of defects during the design and development process.
- (b) To provide for detection of defects during the production process.
- (c) To provide for detection of defects during the service life of the product.

The quality control system is designed to provide the following functions:

- (a) To provide for detection of defects during the design and development process.
- (b) To provide for detection of defects during the production process.
- (c) To provide for detection of defects during the service life of the product.

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1-30-2, p. 202<sup>8</sup>

Data collected through the automated data collection system is accumulated and compiled into management reports. These reports provide data for analysis of performance against the master work schedule and budget, as well as data for local depot maintenance activity use in internal management analysis.<sup>8</sup>

The data collection system provides an automated means of capturing operating source data within the depot maintenance activity. This data supports the supply center cost accounting and payroll functions as well as the management control functions of the depot maintenance activity. The system provides for transaction devices, with receive and inquiry capability, in selected areas, electronically connected to a central processor to permit direct transmission of data to a random access computer. The objectives of this system are to:<sup>9</sup>

1. Simplify the input of source data where it is generated.
2. Provide for accurate and timely processing of source data.
3. Provide for automated operation and financial management reporting.
4. Provide for the accumulation of historical data for planning purposes.
5. Provide a basic tool for management control and cost reduction within the depot maintenance activity.

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<sup>8</sup>Ibid, p. C-05-1.

<sup>9</sup>Ibid, p. D-01-1.



This collected through the advanced data collecting system is transmitted and compared into management system. These results provide the basis of performance against the system with objectives and goals, as well as the for local data collection activity and in financial management analysis.<sup>3</sup>

The data collection system provides an automatic system of recording, storing, and analyzing data within the data management system. This data system the supply sector cost accounting and performance analysis and the management control function of the data management system. The system provides the transmission system, with storage and retrieval capability, is essential to electronically connected to a central computer to provide data transmission of data to a central control system. The objectives of the system are to:

1. Simplify the input of source data when it is generated.
2. Provide for storage and timely processing of source data.
3. Provide for automatic monitoring and financial management reporting.
4. Provide for the accumulation of historical data for management analysis.
5. Provide a basis for management control and decision making within the data management system.

<sup>3</sup> Ibid, p. C-55-1.

<sup>4</sup> Ibid, p. D-51-1.

## CHAPTER VII

### WAR RESERVE

There has been a continuing requirement for improving the procedures of supply support for those items of equipment which are combat essential. Fundamentally, the commanders of the Fleet Marine Forces are given authority to exercise judgment in determining requirements for combat operations. The scope of the war reserve subsystem is to service the M-day requirements of mobilization materiel for the Fleet Marine Forces. It provides necessary management reports to evaluate combat readiness and current posture, reflecting requirements, attainments, and deficiencies.<sup>1</sup>

#### Pre-M-Day Concept

The commanders of Fleet Marine Forces obtain master equipment decks from the inventory control point. These decks contain all repair parts to support the end items of equipment. These decks and the pertinent maintenance publications are used as an aid in determining item range and selection. The selection is performed by technicians within the organization whose primary functions are utilization and repair of the end item of equipment requiring support. The selection is on the basis of the technical knowledge and maintenance experience acquired within the organization. The depth of the requirements are based upon developed factors equated to a thirty-day support requirement for densities representative of a major force structure. Replacement factors, carried to the thousandth position, are combined for each maintenance echelon of mount-out

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<sup>1</sup> U.S. Marine Corps. War Reserve Manual. MCO P4400.80, November 8, 1966, p. A-01-1.

CHAPTER IV  
THE BUREAU

There has been a continuing improvement in the provision of supply support for these items of equipment since the war. Fundamentally, the requirements of the war have been met, and the equipment has been improved in many respects. The scope of the war has been widened in many respects, and the equipment has been improved in many respects. The scope of the war has been widened in many respects, and the equipment has been improved in many respects. The scope of the war has been widened in many respects, and the equipment has been improved in many respects.

THE BUREAU

The Bureau of the War Department is the central authority for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment. It is responsible for the procurement and distribution of military equipment.



and resupply on replacement factor decks, and returned to the inventory control point.

The inventory control point selects the range and depth of items by replacement factors and densities for newly provisioned items. These factors and densities are not normally exceeded or changed for the first year the equipment is in operational use. Since the inventory control point records a thirty-day replacement factor and a total prepositioned war reserve density only, the forces must submit the mount-out and resupply factors by echelon of maintenance, and spread densities by plans and edits before withdrawal of requirements for a specific unit can be accomplished.

Items to be selected for mobilization requirements are based on the following criteria:<sup>2</sup>

1. Items which would be required for the survival of personnel.
2. Items essential for the operational effectiveness of combat, combat support, and combat service support forces.
3. Items essential for the operational effectiveness of the logistics system in support of combat forces.
4. Items, the lack of which would render inoperative or seriously impair the operational effectiveness of an essential equipment or weapon system.
5. Items to be selected in support of a sudden callup of reserve forces, i.e., those essential for initial equipment, and housing or training those reserve forces, approved by the Commandant of the Marine Corps.

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<sup>3</sup>Ibid.

and strongly on replacement factor level, and referred to the inventory control

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The inventory control factor within the range and depth of which is replacement factor and describes the early production limit. These factors and describe the early production limit for the first year the replacement is in operation and since the inventory control factor remains a fairly high replacement factor and a high production was necessary (about 100,000) forces most of the material and energy factors to be used in production, and speed control by plan and with direct adjustment of replacement for a specific unit can be recommended.

There is no reason for considering replacement as a factor in the following manner:

1. Factor which would be applied in the control of production.
2. Factor essential for the operational effectiveness of control, control, supply, and control supply support factor.
3. Factor essential for the operational effectiveness of the production system in support of control factor.
4. Factor, the lack of which would mean replacement as a control factor.
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Requirements form the basis for all logistics efforts, and their determination constitutes a most important phase of the supply cycle.<sup>3</sup> Fundamentally, commanders of the Fleet Marine Forces responsible for combat operations, are given authority to exercise judgement in determining materiel requirements. In making this determination, such data and factors which are logical, and which significantly influence the requirements for the materiel concerned, should be utilized. Correlation studies and logic should be used, preferably on an item basis, to ensure that the best data and factors are applied. Specific policy and guidance, relating to the technique of determining materiel, are necessary. Significant increases in mobilization requirements, without advance coordination, programing, funding, and procurement disrupts orderly operations of the supply system.

Requirements are developed through the computation of the replacement factor percentages and end item densities which are provided by the commanders of the Fleet Marine Forces for repair parts equated to a thirty-day support portrayed by various plans. All strata requirements for the major force structures are recorded in the withdrawal plan file. They are then combined as east and west requirements, and further recorded in the project requirements file by purpose and project codes.

Management considerations for mobilization materiel requirements for M-day differ from considerations and practices applied in support of peacetime forces. Special considerations are required for the following reasons:<sup>4</sup>

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<sup>3</sup> Ibid.

<sup>4</sup> Ibid, p. A-02-2.





1. Mobilization requirements demand that greater emphasis be directed to such functional areas as selection of essential items, determination of density levels, methods of developing requirements, protective measures to ensure materiel availability, process of attainment without the expenditure of funds, and timely withdrawal procedures for materiel support of various mobilization plans.
2. Mobilization requirements for M-day are demands registered in files at the inventory control point requiring procurement or stockage of additional materiel over and above the normal peacetime demand, and anticipated to be required in combat. In determining the level of requirements for M-day, consideration must be given to the increased usage which will be placed on equipment, and losses which will be experienced in the various phases of combat.
3. Since the exact time for the withdrawal of mobilization stocks is unknown, an extra cautious approach is required in the expenditure of funds, as well as consideration of such factors as industrial evolution, advancement in the science of logistical support, and military science and its applications.
4. The limitation of funds available for the enhancement of the mobilization posture requires the most advanced method for selection of the range and depth of items to be procured, which will ensure maximum materiel readiness.

Geographic positioning of mobilization stocks must be on the basis of a planned task force deployment readiness schedule. As a general rule, stocks are positioned at the remote storage activities, Albany, Georgia and Barstow, California, except for those stocks required to be positioned at other remote storage activities due to a specific withdrawal plan schedule or to enable the rotation of stocks.

1.

Indication of equipment located and its use, especially in cases to which equipment is subject to seasonal use, should be clearly stated in the report. It is also necessary to indicate the location of equipment, especially in cases where the equipment is located in a building or other structure, and the location of the equipment should be indicated in the report.

2.

Indication of equipment for which the equipment is used in the inventory should be clearly stated in the report. It is also necessary to indicate the location of equipment, especially in cases where the equipment is located in a building or other structure, and the location of the equipment should be indicated in the report.

3.

Indication of equipment for which the equipment is used in the inventory should be clearly stated in the report. It is also necessary to indicate the location of equipment, especially in cases where the equipment is located in a building or other structure, and the location of the equipment should be indicated in the report.

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Indication of equipment for which the equipment is used in the inventory should be clearly stated in the report. It is also necessary to indicate the location of equipment, especially in cases where the equipment is located in a building or other structure, and the location of the equipment should be indicated in the report.

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Indication of equipment for which the equipment is used in the inventory should be clearly stated in the report. It is also necessary to indicate the location of equipment, especially in cases where the equipment is located in a building or other structure, and the location of the equipment should be indicated in the report.



Approved forces acquisition requirements which have been previously attained, or for which funds have been committed and procurement initiated, are protected by purpose codes. This precludes a drawdown of attained assets for peacetime use.

Authority for the release of mobilization requirements emanates from the Commandant of the Marine Corps.<sup>5</sup> Subsequent to this authorization, and upon issuance of funding data, commanders of the Fleet Marine Forces request release of materiel by plan. Withdrawal of stocks is controlled by preparation of a release transaction at the inventory control point. Established war reserve requirements, however, are not normally reduced by a demand generated short of M-day.

The inventory control point produces various management reports to evaluate combat readiness and the current posture of various organizational withdrawal plans. Reports reflect by strata depth the requirement attained, and deficient posture of all withdrawal plans comprising the full mobilization acquisition objective. An additional report is also rendered reflecting dollar deficiencies. This report list only items having a deficiency, and omits those having one-hundred percent attainment. These reports are furnished to the Commandant of the Marine Corps, commanders of the Fleet Marine Forces, and the inventory control point.

#### Post-M-Day Concept

On M-day and for the duration of a war status, the need to distinguish between general purpose requirements and all aspects of mobilization requirements no longer exists.<sup>6</sup> One elementary purpose will dictate inventory management

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<sup>5</sup> Ibid.

<sup>6</sup> Ibid, p. A-03-1.

Approved from the Department of the Interior, which has been authorized, or for which funds have been appropriated and payments made, are provided in the report. The Department is authorized to make such expenditures.

Authority for the release of land in the Department of the Interior is provided in the report. The Department is authorized to make such expenditures, and the Department is authorized to make such expenditures. The Department is authorized to make such expenditures, and the Department is authorized to make such expenditures. The Department is authorized to make such expenditures, and the Department is authorized to make such expenditures.

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and support of the approved forces operation requirements, which will replace the prior M-day breakdown of peacetime forces and the mobilization of approved forces. The requisitioning objective is then predicated upon the increased consumption reflected by the wartime climate.

Selection of items, replacement factors, and item density for development of withdrawal plans and allowances continue to be the responsibility of the commanders of the Fleet Marine Forces.<sup>7</sup> In a post-M-day climate, the recording of actual usage data generated will greatly enhance the accuracy of future mobilization plans. It is of the utmost importance that this function continue. This record may also be used to generate materiel release orders, by organizational structure, for the purpose of additional supplies.

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<sup>7</sup> Ibid.



[illegible]

of individual plans and alternative courses to be the responsibility of the management of the firm (Harris, 1970). It is possible to identify the following of actual ways that financial will growth achieve the growth of plans, modification plans. It is of the most important that this financial growth. This source may also be used to research actual future source of organizational structure for the growth of individual growth.

## CHAPTER VIII

### SUPPLY MANAGEMENT INFORMATION

The Marine Corps Unified Materiel Management System is a very broad system. Only a few of the major subsystems have been discussed in this paper. A system of this magnitude needs a focal point for collecting useful information and synthesizing it into meaningful reports for management purposes. This subsystem is designed to develop a systematic feedback of information to keep the various levels of management abreast of current operations. In addition, it is intended that the subsystem output provide data for comparative performance at the different levels of structure within the Marine Corps supply system.

In order to ensure that the requirements of the highest levels of management are satisfied, Headquarters, Marine Corps ascertains the information needs for these echelons. These include the requirements of the Department of Defense, Secretary of the Navy, and Headquarters, Marine Corps.

The responsibilities of the inventory control point are:<sup>1</sup>

1. To implement the requirements established by the Commandant of the Marine Corps.
2. To ascertain the information requirements of the inventory control point, remote storage activities, Fleet Marine Force, and other field units.
3. To screen all requirements against existing or known output to determine data availability prior to establishing new requirements for data.

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<sup>1</sup> U.S. Marine Corps. Supply Management Information Manual. MCCP 4400.85, March 28, 1967, p. 2-2.





4. To determine the feasibility of extracting information not existing in the system prior to any design or programming effort.
5. To inform interested levels of management of the status of information requirements.
6. To provide system design which will furnish approved information to interested levels of management within established timeframes.
7. To maintain liaison with various levels of management to ensure the information being provided warrants continuance under MUMMS output or if any changes in designs or programs are necessary.
8. To make a continuing evaluation of the system to give the Marine Corps the maximum utilization of output and processing time.
9. To maintain a current reports catalog.

In implementing any system as complex as MUMMS, it is necessary to develop data that will provide a basis for the evaluation and analysis of overall system effectiveness.<sup>2</sup> The inventory control point develops the necessary output to provide the type data to all levels of management, not only to evaluate and analyze the total system but also each individual segment. Data produced must coincide with uniform defense-wide logistics performance measurement reports as well as the requirements set forth by the Department of the Navy and Headquarters, Marine Corps.

In addition to ensuring the requirements of the Department of Defense are provided for, all report outputs must be reviewed on a continuing basis. With machine time and costs prohibitive factors, a critical review of output is essential. The basic question of who needs the data, when, and what it is used for, must be satisfactorily answered to consider the data essential. Continuous

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<sup>2</sup> Ibid, p. 4-1.

4. To determine the feasibility of collecting information and relating it to the system prior to any design or programming effort.
5. To identify information levels of management in relation to information requirements.
6. To provide system design which will develop approved information levels of management from selected information.
7. To develop design with system design of management in terms of information levels provided system components which will be used on it and design is designed as program are necessary.
8. To make a continuing evaluation of the system as the design progresses the design situation of design and programming.
9. To evaluate a system design.

It is recommended that a system be designed to provide a means for the evaluation and analysis of the system's performance. The system's performance should be evaluated in terms of its ability to provide the required level of service to the user. The system's performance should be evaluated in terms of its ability to provide the required level of service to the user. The system's performance should be evaluated in terms of its ability to provide the required level of service to the user. The system's performance should be evaluated in terms of its ability to provide the required level of service to the user.

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review and evaluation will ensure the highest practical utilization of hardware and people at a minimum cost. It will also ensure that the management information system is continually refined and improved in keeping with the needs of management.



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## CHAPTER IX

### OTHER SUBSYSTEMS

There are seven other subsystems under MUMMS that have not been discussed in other chapters. These subsystems will be only briefly discussed in this chapter for the purpose of showing the interface and continuity of the complete system to the reader.

#### Controlled Item Management

This subsystem contains complete asset data for principal items and depot reparable. Requisitions for these items are computer-screened to determine if filling of the requisition would exceed the allowance of the requisitioner. If the requisition passes the check, it is processed further; if not, it is suspended for manager action. This subsystem contains a complete range of allowance-type requirement data needed in the development of provisioning, war reserve, and applications requirements. It further provides the data needed to prepare budget stratification reports for appropriation stores account items.<sup>1</sup>

Material planning studies are computer-produced quarterly or semiannually from asset, allowance, and troop list data available in the files of this subsystem. They are provided to the manager at the inventory control point and Headquarters Marine Corps for use in stock management, budget, and procurement determinations.<sup>2</sup>

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<sup>1</sup> U.S. Marine Corps. Introduction Manual. MCO P4400.70, June 28, 1966, p. B-11-3.

<sup>2</sup> U.S. Marine Corps. Controlled Item Management Manual. MCO P4400.82, March 24, 1967, p. 1-2.





Selected assets in the hands of troops, in stock at remote storage activities, due in to stock, being repaired, in maintenance float, on loan, and government-furnished materiel in the hands of contractors, are also recorded in the files of this subsystem.

#### Direct Support Stock Control

This subsystem is designed to record and accumulate all data required for routine recordkeeping, requisitioning, reporting, and maintaining history. The accounts within the subsystem are self-service centers, shop stores, retail clothing outlets, subsistence accounts, ammunition accounts, petroleum, oil, lubricants, and separate individual clothing accounts. All materiel belongs to the Marine Corps distribution system.

Key features include:<sup>3</sup>

1. Elimination of recordkeeping at the issue points.
2. Automatic requisitioning based on past demand history.
3. Automated daily and quarterly reporting of asset status and transactions which affect the inventory and stores records at the inventory control point.
4. Automatic disposal of excesses based on programmed rules.
5. Automatic redistribution between issue points, when required.

Items stocked are those which have been decontrolled for local procurement, and items which the inventory control point has authorized the remote storage activity to stock, but which have not been decontrolled for local procurement.

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<sup>3</sup> U.S. Marine Corps. Direct Support Stock Control Manual. MCO P4400.76, April 5, 1967, p. A-04-1.

detected assets in the hands of persons, in which it remains without exception, and in its stock, being required, in maintenance thereof, to have and maintain a limited amount in the hands of contributors, the law provided in this way the system.

### Direct Support Stock Control

This system is designed to prevent the accumulation of this support for certain contributions, contributions, reporting, and maintaining history. The records which the companies are self-sufficient should, with other, while closing other, economic records, economic records, persons, or, historic, and support individual closing records. All records belong to the Major Corps Division system.

#### Key features include:

1. Elimination of responsibility of the same system.
2. Automatic reporting based on past system history.
3. Automatic daily and quarterly reporting of assets to one and the same system which effect the history and other records in the company control.

#### Notes:

1. Automatic elimination of persons names as programmed rules.
  2. Automatic reporting system between Major Corps, when required.
- These records are those which have been documented for legal requirements and those which the necessary records must be retained for record keeping activity to stock, and which have not been documented for legal requirements.

### Technical Data Management

This subsystem is designed to establish the policies and rules, and to develop the procedures related to the Federal Cataloging Program and selected management data programs of the Department of Defense, Defense Supply Agency, and the Marine Corps. These policies, rules, and procedures provide instruction and guidance for the development, maintenance, notification, and publication of federal cataloging, technical, and selected management data. The detailed procedures outline specific functions and responsibilities necessary to maintain pertinent files of data related to items of supply and production, and provide a means of ready retrieval of stored data through the use of inquiry techniques; provide notification of cataloging and management data changes to Marine Corps organizations and certain other Department of Defense materiel management systems; and furnish cataloging and management data support for specific functions and operations of inventory control point programs.<sup>4</sup>

### Special Programs

This subsystem is designed to give the program manager one place to look for control, cost information, and status of his program. Special programs include assembly, disassembly, modification, modernization, alteration, research and test, government-furnished materiel, recoverable items, collateral equipment, ready line materiel, project plus, and loans.<sup>5</sup>

Projects are controlled on Military Interdepartmental Purchase Request numbers, contract numbers, or project numbers. As an additional control, the manager may query the file at any time and receive status.

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<sup>4</sup> U.S. Marine Corps. Technical Data Management Manual. MCO P4400.77, February 2, 1967, p. A-01-1.

<sup>5</sup> U.S. Marine Corps. Special Programs Manual. MCO P4400.84, May 18, 1967, p. A-01-1.





Cost information received from the stores, depot maintenance management, and other subsystems is available in the file, and is furnished to the manager on an exception basis, or upon inquiry. Exception reports, project cost data, project completion notices, and file inquiry replies are also furnished to the program manager.

### Applications

This subsystem provides an automated capability to maintain certain elements of current management data for all stock numbered items in the Marine Corps materiel support system. It computes retention levels for special item categories to ensure protection of assets. Peculiar and common parts of equipment are identified, as well as items to be phased out of the system.<sup>6</sup>

The capability is provided to identify repair parts to all of their applications. This capability applies to component items, to the end item of which the component is a part, and to any other item to which it may have application. It further provides the capability to identify the range and depth of repair parts required to support specific equipments, and to calculate levels and allowances for repair parts based on the projection of the repair parts replacement factors.

Current "consist of" listings, with desired management data, are provided on an "as required" basis. At the time initial issues are made, the inventory control point provides each affected organization a repair parts interrelationship list which will identify all repair parts peculiar to the old equipment; peculiar to the new equipment; and common to old, new, and other equipments. These lists may be used for cancellation of requisitions for parts no longer required, and to purify stocks at using and service unit levels.

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<sup>6</sup> U.S. Marine Corps. Applications Manual. MCO F4400.78, October 10, 1966, p. 01-1.

Cost information provided from the current period information is provided, and other information is available in the past, but is provided in the current period. In some cases, the current period information is provided in the current period, and the current period information is provided in the current period.

## Application

This application provides an overview of the application, and is intended to provide an overview of the application. It is intended to provide an overview of the application, and is intended to provide an overview of the application. It is intended to provide an overview of the application, and is intended to provide an overview of the application.

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This program also provides the means to respond more rapidly to general-type support capability requirements. Supply support programs include the supply system capability to support present or increased density; cost out the support of an increased density; estimate the time required to reach a support status; and identify items required and available for special programs, including the Military Assistance Program.

#### Data Control

The primary purpose of this subsystem is to maintain a common language of terms (their definitions and abbreviations) and codes for universal use throughout the Marine Corps and other agencies.<sup>7</sup> The definition of each term and its approved abbreviation is controlled at the inventory control point to ensure consistency and compatibility in usage.

#### Mechanization of Warehousing and Shipment Processing

This subsystem is an automated procedure for shipment of supplies, receipts, in-storage operations, and preparation of management reports. It covers the receiving process; the issue and shipment process; the preservation and packing process; operational inspection of technical items; and space reporting. It simplifies the warehousing and shipping operations through elimination of unnecessary manual methods.

Data processing capability includes:<sup>8</sup>

1. Random access with a remote inquiry capability to obtain location and shipping data.

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<sup>7</sup> U.S. Marine Corps. Data Control Manual. MCO P4400.71, October 10, 1966, p. 01-1.

<sup>8</sup> U.S. Marine Corps. Mechanization of Warehousing and Shipment Processing Manual. MCO P4400.75, p. 1A-01-1.





2. Construction of shipment and transportation units within the computer to achieve maximum freight consolidation.
3. The printing of shipping documents from computer files.
4. Preparation of management tools, including shipment workload forecast, warehouse workload summary, management reports on the status of end items being processed for shipment, and new item receipt notices.
5. Tonnage distribution by carrier is recorded in the computer to ensure equal distribution among carriers. Items to be released from the repair function appear on the shipment planning forecast to facilitate shipment.
6. The inventory control point and defense supply agencies provide the the remote storage activities with prepositioned materiel receipt data which can be loaded into the computer. The remote storage activities key this data into their remote equipment and obtain automated output of the planned locations.
7. Items requiring special handling are controlled throughout the issue process by the computer. Bin replenishment is an automated procedure.
8. The care-in-store program is computer-scheduled using a sampling technique. Shelf-life items are computer controlled.
9. The storage location master file contains the storage in each storage area, including that which is leased out and licensed. Space reports are produced by the computer.

The inventory program is based on location verification, a complete check of stock denials, and the establishment of a system error file to determine the cause of stock denials. As long as the stock denial rate is within satisfactory limitations, location verification on a statistical sampling basis is the primary requirement of the physical inventory program. This principle of management



1. The primary purpose of the system is to provide a means of controlling the flow of information between the various departments of the organization. This is achieved by the use of a central database which is accessible to all departments. The system is designed to be flexible and adaptable to changing requirements. It is also designed to be secure and reliable. The system is designed to be easy to use and to provide a high level of service to the user. The system is designed to be cost-effective and to provide a high level of performance. The system is designed to be scalable and to provide a high level of security. The system is designed to be flexible and adaptable to changing requirements. It is also designed to be secure and reliable. The system is designed to be easy to use and to provide a high level of service to the user. The system is designed to be cost-effective and to provide a high level of performance. The system is designed to be scalable and to provide a high level of security.

by exception prevails throughout this subsystem with special attention given to known problem areas.

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## CHAPTER X

### SUMMARY AND CONCLUSIONS

#### Summary

Chapter I presented an overview of MUMMS operating procedures, computer concepts, and command relations between the inventory control point and the remote storage activities in order to lay the groundwork for examination of the individual subsystems. Chapter II examined the functional areas of inventory control. The key word in this area is "control." With the control and automation inherent in good inventory management, all of the virtues of a modern inventory system are possible: flexibility, adaptability, reliability, and responsibility. Chapter III centered on the process of procurement operations and its capabilities under an effective automated system. An analysis of the provisioning process was made in Chapter IV. Providing the initial and continued support to permit introduction of a new end item is no easy task. It involves the coordinated planning and execution of numerous processes by a multitude of activities and personnel over a considerable period of time. In Chapter V the ever critical processes of budgeting and accounting were covered. Accurate requirements determination coupled with adequate controls to ensure the validity of funds are very important cogs in the wheel of supply.

The subject of maintenance management was discussed in Chapter VI. This includes accomplishment of major repair and overhaul of all types of Marine Corps tactical, combat, and supporting equipment. Chapter VII examined the techniques for the establishment, computation, and withdrawal of mobilization materiel required to support Fleet Marine Forces in a war situation. Chapter VIII discussed the collecting of useful information and synthesizing it into





meaningful reports for management purposes. In Chapter IX all subsystems not covered in individual chapters were discussed.

### Conclusions

In any system as broad and complex as MUMMS there are bound to be deficiencies. MUMMS is no exception. It was implemented on May 1, 1967, and is still in its first year of the "shaking down" process. MUMMS is basically a real-time computer system. The majority of data is maintained "on-line." Most files and data are updated as events occur. The computer can be interrogated from remote terminals. System designers and programmers worked approximately three years in getting the system "on the air."

Some deficiencies were discovered subsequent to the implementation of MUMMS. Forecasted demands have run much higher than actual requirements. This may require that the formula and procedures utilized in forecasting demands for inventory control and stratification purposes be revised.<sup>1</sup> In addition, stores account balances have run much higher than actual inventory balances. Reconciliation has been impossible as of March 1, 1968.<sup>2</sup>

Sales have experienced an unsatisfactory decrease. Since the office of the Secretary of Defense (OSD) budget analysts base their apportionment process largely on sales (issue of materiel), this concerns the financial managers very much. This results in much difficulty in justifying apportionment requests.<sup>3</sup>

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<sup>1</sup> Interview with Mr. Jack Blinn, Supply Department, Headquarters, Marine Corps, March 8, 1968.

<sup>2</sup> Interview with LtCol Calvert and Mr. Tony Varano, Supply Department, Headquarters, Marine Corps, March 8, 1968.

<sup>3</sup> Interview with Mr. Oswald Dalley, Supply Department, Headquarters, Marine Corps, March 8, 1968.



and covered by individual officers with discretion.

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These differences were observed regardless of the magnitude of the difference between the two groups. The results suggest that the two groups were not different in their response to the treatment. The results also suggest that the two groups were not different in their response to the treatment. The results also suggest that the two groups were not different in their response to the treatment.

1. The results of work efforts in building management systems

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<sup>6</sup>Information was obtained from the following sources:  
The American Medical Association, Chicago, Ill.

arrangement, including Upper Yellow River and the central  
part of the lower Yellow River.

Implementation of the system two months prior to the beginning of the fiscal year created many problems in the financial area. This was a timing failure. This timing failure also resulted in files not being adequately purged prior to conversion.

My research convinced me that irregardless of the deficiencies and shortcomings of the system discovered since implementation, MUMMS is an effective, operational materiel management system. The bases for my conclusion are specified in the following paragraphs.

MUMMS is fully compatible with all standardized requirements of the Department of Defense. This allows much faster information flow between the Marine Corps and other Department of Defense and federal agencies.

The system is totally integrated and is designed to satisfy all internal and external Marine Corps requirements. There is complete interface among all subsystems. Close surveillance is maintained over all system elements to evaluate and improve system effectiveness. In addition, the effectiveness of computer programs are continuously evaluated.

There is one central supply processing point for the Marine Corps distribution system. The inventory control point controls the input, availability, and disposal of materiel. All the benefits and advantages of a highly centralized organization are enjoyed.

The system possesses the all important ingredient of flexibility. It has the ability to segment the inventory in the central computer record by purpose, condition, project, and location. It controls the issue, pass, and backorder routines. It can produce status for the customer automatically, forecast demands, compute stock levels, and attain requirements. It further allows the managers to identify requirements from initial planning to ultimate issue.

There is rapid transmission of transactions and data. There is also faster updating of records resulting in faster response to customers' needs.



Implementation of the system was essential prior to the beginning of the fiscal year. Several major problems in the financial area. This was a long labor. The long labor also resulted in the not being adequately budgeted prior to execution.

The system was developed and the data organization in the financial and management of the system discussed with management. It is an effective, operational financial management system. The basis for my position was specified in the following paragraphs.

There is a help committee with all standardized requirements of the Department of Defense. This office must have information from the other major and other Department of Defense and Federal agencies.

The system is being implemented and is designed to help all financial and financial management. There is a program to help manage all departments. There are difficulties in maintaining very high quality standards and improve system effectiveness. In addition, the effectiveness of computer programs and financial systems.

There is a need for a program to help the financial management system. The financial control system must be able to handle all financial and financial. All the financial and financial of a high quality and financial are required.

The system provides for all important information of financial. It has the ability to manage the financial in the current management system of financial, financial, and financial. It controls the financial, and financial. It has financial for the financial management, financial management. It has financial and financial management. It has financial management from financial management to financial management.

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The adoption of MILSTRIP gives the means to speak the same language within the Marine Corps, as well as with other services and federal agencies.

Accuracy and timeliness of financial data is assured. Techniques are provided for monitoring funds to ensure that overcommitments and overobligations do not occur. Audit trails are provided by ensuring that balances comprise a control balance at a given date and that the total of transactions may be traced to an original source document. Methods were designed to check balances, reserve funds, restrict commitments and avoid duplicate transactions.

The system results in a considerable reduction in administrative leadtime in the procurement process. It hastens the process from the time the demand is made known until the contract is awarded to a commercial supplier.

Warehousing and shipping operations are simplified through elimination of unnecessary manual methods. It contains automated procedures for shipment of supplies, receipts, in-storage operations, and preparation of management reports.

Initial spares, repair parts, special tools, test equipment, and support equipment required for initial support of new items are procured and protected from general issue, and are distributed on a more timely basis to appropriate organizations. Materiel requirements and financial assets are collated into a more accurate determination of deficiencies by time-sequence.

I was also convinced through my research that MUMMS is an effective management information system. A supply management information subsystem was designed as a focal point for collecting useful data from all of the subsystems and for collating it into meaningful reports for management personnel. It incorporates all of the processes and procedures necessary to support a centralized materiel management approach. Each subsystem design includes processes for generating prescribed output to the supply management information subsystem. All of this data is collected in a data bank from which it is retrieved for integrated

[illegible]

The system exists in a somewhat confused state in the present day. It is the province of the future to decide the question of the future of the system.

[illegible]

It is a common mistake to think that the only way to improve the quality of a product is to increase the number of inspections. In fact, the most effective way to improve quality is to prevent defects from occurring in the first place. This can be achieved by implementing a quality management system (QMS) that focuses on preventing defects rather than detecting them. A QMS is a set of processes and procedures that are designed to ensure that a product or service meets the requirements of the customer. It includes a variety of tools and techniques, such as statistical process control (SPC), failure mode and effects analysis (FMEA), and process capability analysis (PCA). By implementing a QMS, a company can reduce the number of defects, improve the consistency of its products, and increase the efficiency of its production process. This, in turn, can lead to higher customer satisfaction and increased profitability.



processing on schedule. The initial subsystem design pinpointed the need for integrated reporting in four areas as follows;:

1. MILSTRIP Workload Analysis.—Processes in this area are focused on the Department of Defense reporting requirements prescribed in MILSTRIP.
2. MILSTRAP Workload Analysis.—Processes in this area provide workload information in all MILSTRAP aspects of the distribution system.
3. Readiness Reporting and Control.—Processes in this area are focused on maintaining central intelligence of the readiness posture of field activities.
4. Financial and Management Analysis.—Processes in this area are focused on incorporation of financial data from the functional subsystems into integrated financial reports.

Management reporting is well coordinated and controlled throughout the system. In each subsystem, management reports are designed to assist and inform the managers at all levels. Indications are that current management information needs are being satisfied by the system.

The Marine Corps has taken a giant step forward by the design and implementation of MUMMS. It has looked to the future and has not allowed modern technology to overrun it. Undoubtedly, being in a warlike situation upon implementation of the system, attributed to some of its deficiencies by the abnormal demands placed upon it. In the long run, however, the experience gained will attribute to its ultimate efficiency and effectiveness.



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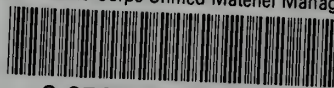
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